Section 2.6-4 (Table and Figure)

Table 2.6-1 Moore Ranch Oil Holes

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	27	4275-27-4096	317808.9	1060745	398.9
42	75	27	4275-27-4097	317894.2	1060732	395.5
42	75	27	4275-27-4098	317994.8	1060709	395
42	75	27	4275-27-4099	318094.3	1060707	393.9
42	75	27	4275-27-4100	318288.9	1060745	393.8
42	75	27	4275-27-4101	318206.1	1060762	394.1
42	75	27	4275-27-4102	318107.9	1060783	394.5
42	75	27	4275-27-4103	318016.6	1060804	396.6
42	75	27	4275-27-4104	317910.4	1060827	396.7
42	75	27	4275-27-4105	317812.1	1060850	395.5
42	75	27	4275-27-4106	317824.2	1060950	397.8
42	75	27	4275-27-4107	317929.3	1060926	305.4
42	75	27	4275-27-4108	318033.4	1060903	398.2
42	75	27	4275-27-4109	318132.3	1060880	397.1
42	75	27	4275-27-4110	318227.6	1060858	395.1
42	75	27	4275-27-4111	318249	1060948	394.5
42	75	27	4275-27-4112	318152.8	1060973	395.9
42	75	27	4275-27-4113	318054.5	1060996	397.8
42	75	27	4275-27-4114	317947.8	1061022	398.4
42	75	27	4275-27-4115	317834.7	1061049	398.5
42	75	27	4275-27-4116	317849.2	1061148	397.8
42	75	27	4275-27-4117	317966.6	1061118	397.4
42	75	27	4275-27-4118	318077.2	1061091	397.7
42	75	27	4275-27-4119	318173.6	1061068	395.8
42	75	27	4275-27-4120	318271.7	1061043	398.7
42	75	27	4275-27-4121	318194.4	1061181	397.9
42	75	27	4275-27-4122	318101.2	1061203	395.5
42	75	27	4275-27-4123	317984.8	1061222	395.5
42	75	27	4275-27-4124	317860.8	1061243	395.7
42	75	27	4275-27-4125	318009	1061325	397.6
42	75	27	4275-27-4126	318127.3	1061304	398.3
42	75	27	4275-27-4127	318221.9	1061287	397.6
42	75	27	4275-27-4128	318626.5	1060160	799.1
42	75	27	4275-27-MW-11	317691.5	1061878	339.1
42	75	34	4275-34-1	320034	1058069	
42	75	34	4275-34-10	318118	1060346	
42	75	34	4275-34-100	317617	1058047	
42	75	34	4275-34-101	317730	1057650	
42	75	34	4275-34-102	317290	1057650	
42	75	34	4275-34-103	317740	1056850	
42	75	34	4275-34-104	317340	1056450	
42	75	34	4275-34-105	318930	1055850	
42	75	34	4275-34-106	318140	1056655	
42	75	34	4275-34-107	318140	1056450	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-108	317780	1055750	
42	75	34	4275-34-109	317730	1057250	
42	75	34	4275-34-11	318218	1060245	
42	75	34	4275-34-110	317340	1056650	
42	75	34	4275-34-111	314794	1059619	
42	75	34	4275-34-112	315189	1059996	
42	75	34	4275-34-113	315190	1059193	
42	75	34	4275-34-114	315600	1060427	
42	75	34	4275-34-115	315178	1058389	
42	75	34	4275-34-116	314802	1058414	
42	75	34	4275-34-117	318120	1057850	
42	75	34	4275-34-118	317919	1057847	
42	75	34	4275-34-119	317720	1057850	
42	75	34	4275-34-12	318218	1060144	
42	75	34	4275-34-120	317520	1057850	
42	75	34	4275-34-121	317520	1057450	
42	75	34	4275-34-122	318520	1057050	
42	75	34	4275-34-123	319920	1057050	
42	75	34	4275-34-124	319920	1057250	
42	75	34	4275-34-125	319720	1056850	
42	75	34	4275-34-126	319720	1056650	
42	75	34	4275-34-127	319120	1056650	
42	75	34	4275-34-128	318720	1056650	
42	75	34	4275-34-129	318520	1056250	
42	75	34	4275-34-13	318119	1060046	
42	75	34	4275-34-130	318920	1056250	
42	75	34	4275-34-131	319920	1056250	
42	75	34	4275-34-132	319520	1056050	
42	75	34	4275-34-133	319520	1055650	
42	75	34	4275-34-134	319920	1055650	
42	75	34	4275-34-135	319920	1055850	
42	75	34	4275-34-136	317320	1057850	
42	75	34	4275-34-137	318320	1057850	
42	75	34	4275-34-138	317920	1057650	
42	75	34	4275-34-139	319720	1056250	
42	75	34	4275-34-14	318018	1059947	
42	75	34	4275-34-140	319720	1056450	
42	75	34	4275-34-141	319820	1056850	
42	75	34	4275-34-142	319720	1057050	
42	75	34	4275-34-143	317520	1057650	
42	75	34	4275-34-144	319720	1055850	
42	75	34	4275-34-145	318520	1055850	
42	75	34	4275-34-146	319320	1056250	
42	75	34	4275-34-147	319120	1056450	

Table 2.6-1 Core Ranch Drill Holes

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-148	318920	1056450	
42	75	34	4275-34-149	318120	1057450	
42	75	34	4275-34-15	318020	1059547	
42	75	34	4275-34-150	317520	1057950	
42	75	34	4275-34-151	318520	1056050	
42	75	34	4275-34-152	318720	1056450	
42	75	34	4275-34-153	319120	1056250	
42	75	34	4275-34-154	319420	1056250	
42	75	34	4275-34-155	319320	1056350	
42	75	34	4275-34-156	319820	1056250	
42	75	34	4275-34-157	318320	1057450	
42	75	34	4275-34-158	318520	1057850	
42	75	34	4275-34-159	317620	1057950	
42	75	34	4275-34-16	318121	1059348	
42	75	34	4275-34-160	317420	1057950	
42	75	34	4275-34-161	317420	1057850	
42	75	34	4275-34-162	317620	1057850	
42	75	34	4275-34-163	317821	1056040	
42	75	34	4275-34-164	319220	1056250	
42	75	34	4275-34-165	319220	1056350	
42	75	34	4275-34-166	319420	1056350	
42	75	34	4275-34-167	317320	1057750	
42	75	34	4275-34-168	317408	1057743	
42	75	34	4275-34-169	317520	1057750	
42	75	34	4275-34-17	318117	1059246	
42	75	34	4275-34-170	319320	1056450	
42	75	34	4275-34-171	319120	1056350	
42	75	34	4275-34-172	319720	1056350	
42	75	34	4275-34-173	319920	1056150	
42	75	34	4275-34-174	317720	1057950	297.9241
42	75	34	4275-34-175	317392	1057648	
42	75	34	4275-34-176	317920	1060450	333.9829
42	75	34	4275-34-177	318020	1060346	338.9079
42	75	34	4275-34-178	318220	1060345	337.9614
42	75	34	4275-34-179	317722	1059843	
42	75	34	4275-34-18	318020	1059146	
42	75	34	4275-34-180	318019	1059744	255.8768
42	75	34	4275-34-181	317726	1059544	289.9805
42	75	34	4275-34-182	317819	1059246	289.9211
42	75	34	4275-34-183	317528	1058822	249.9024
42	75	34	4275-34-184	317529	1058743	249.8311
42	75	34	4275-34-185	317628	1058646	251.9526
42	75	34	4275-34-186	317820	1058646	249.9805
42	75	34	4275-34-187	317924	1058758	289.8895

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-188	318320	1058746	270.9107
42	75	34	4275-34-189	318219	1058545	271.9962
42	75	34	4275-34-19	317820	1059146	
42	75	34	4275-34-190	317721	1058550	251.9883
42	75	34	4275-34-191	317719	1058448	242.9763
42	75	34	4275-34-192	317618	1058342	230.964
42	75	34	4275-34-193	317619	1058241	233.9217
42	75	34	4275-34-194	318118	1058147	231.874
42	75	34	4275-34-195	317521	1058145	229.9859
42	75	34	4275-34-196	317508	1058052	211.931
42	75	34	4275-34-197	317816	1060543	329.9131
42	75	34	4275-34-198	317516	1058231	231.9776
42	75	34	4275-34-199	317522	1058347	249.9367
42	75	34	4275-34-2	319212	1058107	
42	75	34	4275-34-20	317720	1059146	
42	75	34	4275-34-200	317618	1058293	233.9
42	75	34	4275-34-201C	317621	1058896	271.9
42	75	34	4275-34-202C	317618	1059198	261.9
42	75	34	4275-34-203C	317720	1058296	254
42	75	34	4275-34-204C	317675	1058295	
42	75	34	4275-34-205C	317723	1059194	
42	75	34	4275-34-206C	317721	1058898	
42	75	34	4275-34-207C	317919	1059194	288.6
42	75	34	4275-34-208C	317819	1059196	270.9
42	75	34	4275-34-209C	317821	1058894	272.6
42	75	34	4275-34-21	317721	1059047	
42	75	34	4275-34-210C	317821	1058298	253
42	75	34	4275-34-211C	317919	1058896	269.9
42	75	34	4275-34-212C	318019	1058899	269.8
42	75	34	4275-34-213C	317921	1058297	252
42	75	34	4275-34-214C	318021	1058298	252
42	75	34	4275-34-215C	318121	1058295	245.8
42	75	34	4275-34-216C	318020	1059196	292
42	75	34	4275-34-217C	318222	1058299	252.9
42	75	34	4275-34-218	317870	1059195	277
42	75	34	4275-34-219	317771	1059196	248
42	75	34	4275-34-22	317622	1058945	
42	75	34	4275-34-220	317866	1058987	277.8
42	75	34	4275-34-221	317820	1058940	275
42	75	34	4275-34-222	317872	1058895	275
42	75	34	4275-34-223	317771	1058897	275
42	75	34	4275-34-224	317773	1058841	272.9
42	75	34	4275-34-225	317874	1058845	272.9
42	75	34	4275-34-226	317773	1058743	275

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-227	317876	1058750	277.9
42	75	34	4275-34-228	317751	1058794	277.9
42	75	34	4275-34-229	317823	1058795	277
42	75	34	4275-34-23	317720	1058846	
42	75	34	4275-34-230	317874	1058799	273
42	75	34	4275-34-231	317823	1058696	276.9
42	75	34	4275-34-232	317721	1058698	274
42	75	34	4275-34-233	317922	1058697	274.9
42	75	34	4275-34-234	317771	1058646	254
42	75	34	4275-34-235	317874	1058648	231.3
42	75	34	4275-34-236	317973	1058646	274.9
42	75	34	4275-34-237	317522	1058644	254.8
42	75	34	4275-34-238	317429	1058739	254.9
42	75	34	4275-34-239	317924	1058597	272.9
42	75	34	4275-34-24	317821	1058846	
42	75	34	4275-34-240	317770	1058549	253.9
42	75	34	4275-34-241	317717	1058496	259
42	75	34	4275-34-242	317612	1058447	257
42	75	34	4275-34-243	318071	1058546	276.9
42	75	34	4275-34-244	318123	1058598	273.9
42	75	34	4275-34-245	318120	1058498	274.8
42	75	34	4275-34-246	318168	1058447	273.9
42	75	34	4275-34-247	317967	1058446	270.6
42	75	34	4275-34-248	318118	1058341	293.7
42	75	34	4275-34-249	318070	1058389	273.9
42	75	34	4275-34-25	317920	1058846	
42	75	34	4275-34-250	318071	1058245	254.9
42	75	34	4275-34-251	318221	1058149	234.9
42	75	34	4275-34-252	318117	1058095	177
42	75	34	4275-34-253	317920	1058095	236.9
42	75	34	4275-34-254	317714	1058094	237
42	75	34	4275-34-255	317615	1058095	235.9
42	75	34	4275-34-256	317615	1059097	276
42	75	34	4275-34-257	317872	1058943	275.8
42	75	34	4275-34-258	317988	1058986	271
42	75	34	4275-34-259	317971	1059048	275
42	75	34	4275-34-26	318019	1058848	
42	75	34	4275-34-260	317926	1059097	272
42	75	34	4275-34-261	317775	1059048	275.4
42	75	34	4275-34-262	317670	1059043	274.9
42	75	34	4275-34-263	317772	1058944	250.5
42	75	34	4275-34-264	317723	1058947	274.9
42	75	34	4275-34-265	317672	1058950	270
42	75	34	4275-34-266	317969	1058897	274.9

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-267	317974	1058848	273
42	75	34	4275-34-268	318020	1058802	275.8
42	75	34	4275-34-269	317678	1058839	272.9
42	75	34	4275-34-27	318121	1058745	
42	75	34	4275-34-270	317724	1058787	275
42	75	34	4275-34-271	317871	1058547	252.9
42	75	34	4275-34-272	317721	1059297	273.9
42	75	34	4275-34-273	317821	1059293	273.2
42	75	34	4275-34-274	317971	1059196	266.8
42	75	34	4275-34-275	318020	1059246	213.9
42	75	34	4275-34-276	317520	1059150	275.9
42	75	34	4275-34-277	318120	1058795	296
42	75	34	4275-34-278	318172	1058647	272.9
42	75	34	4275-34-279	318173	1058600	245
42	75	34	4275-34-28	318120	1058647	
42	75	34	4275-34-280	318071	1058496	226.8
42	75	34	4275-34-281	318267	1058300	254
42	75	34	4275-34-282	318265	1058248	254
42	75	34	4275-34-283	318216	1058197	232.8
42	75	34	4275-34-284	318266	1058151	
42	75	34	4275-34-285	318118	1058046	234
42	75	34	4275-34-286	317969	1058096	234.9
42	75	34	4275-34-287	318069	1058089	231.4
42	75	34	4275-34-288	317865	1058095	235.7
42	75	34	4275-34-289	317760	1058094	232.8
42	75	34	4275-34-29	317920	1058647	
42	75	34	4275-34-290	317670	1059096	274
42	75	34	4275-34-291	317568	1058342	235
42	75	34	4275-34-292	317564	1058236	236
42	75	34	4275-34-293	317566	1058146	229.9
42	75	34	4275-34-294	317515	1058094	232
42	75	34	4275-34-295	317563	1058046	232
42	75	34	4275-34-296	317666	1059247	274.9
42	75	34	4275-34-297	317773	1058597	253.8
42	75	34	4275-34-298	317775	1058696	273
42	75	34	4275-34-299	317824	1058599	251.9
42	75	34	4275-34-3	319320	1057250	
42	75	34	4275-34-30	317921	1058547	
42	75	34	4275-34-300	317763	1058494	256
42	75	34	4275-34-301	318017	1058493	256
42	75	34	4275-34-302	318020	1058598	273.8
42	75	34	4275-34-303	318121	1058696	293.9
42	75	34	4275-34-304	318324	1058650	275.8
42	75	34	4275-34-305	318316	1058100	232.9

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-306	318015	1058046	232
42	75	34	4275-34-307	317464	1058047	236
42	75	34	4275-34-308	317672	1059300	274
42	75	34	4275-34-309	317519	1059246	277
42	75	34	4275-34-31	318020	1058546	
42	75	34	4275-34-310	317570	1059150	276
42	75	34	4275-34-311	317562	1059098	274.9
42	75	34	4275-34-312	317615	1058994	274
42	75	34	4275-34-313	317576	1058838	275
42	75	34	4275-34-314	317576	1058741	256
42	75	34	4275-34-315	317573	1058885	273.8
42	75	34	4275-34-316	317668	1058499	253
42	75	34	4275-34-317	317618	1058499	254
42	75	34	4275-34-318	317614	1058396	254.9
42	75	34	4275-34-319	317663	1058445	254.9
42	75	34	4275-34-32	317821	1058347	
42	75	34	4275-34-320	317559	1058448	257.9
42	75	34	4275-34-321	317766	1058048	254
42	75	34	4275-34-322	317869	1058046	232
42	75	34	4275-34-323	317969	1058049	200
42	75	34	4275-34-324	318070	1058047	234.9
42	75	34	4275-34-325	318169	1058096	
42	75	34	4275-34-326	318265	1058201	232.9
42	75	34	4275-34-327	318315	1058207	185.9
42	75	34	4275-34-328	318318	1058252	256.4
42	75	34	4275-34-329	318171	1058698	292.9
42	75	34	4275-34-33	317922	1058247	
42	75	34	4275-34-330	318170	1058746	293.9
42	75	34	4275-34-331	318069	1058749	294.8
42	75	34	4275-34-332	318071	1058797	294.8
42	75	34	4275-34-333	317969	1058801	274.7
42	75	34	4275-34-334	317972	1059098	275
42	75	34	4275-34-335	318069	1059245	293
42	75	34	4275-34-336	318068	1059349	294.7
42	75	34	4275-34-337	317525	1059305	295
42	75	34	4275-34-338	317568	1059197	275
42	75	34	4275-34-339	317564	1059045	274.9
42	75	34	4275-34-34	318022	1058248	
42	75	34	4275-34-340	317567	1058994	273.9
42	75	34	4275-34-341	317568	1058947	274.9
42	75	34	4275-34-342	317520	1058886	275
42	75	34	4275-34-343	317563	1058397	249.9
42	75	34	4275-34-344	317566	1058286	236.9
42	75	34	4275-34-345	317565	1058188	233.9

Table 2.6-1 Moore Ranch Drill Holes

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-346	317570	1058096	231.9
42	75	34	4275-34-347	318217	1058397	274.9
42	75	34	4275-34-348	318221	1058697	294.9
42	75	34	4275-34-349	318221	1058796	291.8
42	75	34	4275-34-35	318220	1058249	
42	75	34	4275-34-350	318175	1058795	293.8
42	75	34	4275-34-351	318014	1058195	250
42	75	34	4275-34-352	318267	1058099	
42	75	34	4275-34-353	317873	1058697	275
42	75	34	4275-34-354	318071	1059297	294.9
42	75	34	4275-34-355	317574	1059305	249.9
42	75	34	4275-34-356	317624	1059305	249.9
42	75	34	4275-34-357	317673	1059348	294.9
42	75	34	4275-34-358	317571	1059248	274.9
42	75	34	4275-34-359	317467	1059246	272
42	75	34	4275-34-36	318419	1058148	
42	75	34	4275-34-360	317472	1059155	275
42	75	34	4275-34-361	317468	1059202	250
42	75	34	4275-34-362	317519	1059199	274.9
42	75	34	4275-34-363	318272	1058848	294.9
42	75	34	4275-34-364	318221	1058847	291.9
42	75	34	4275-34-365	318169	1058847	294.8
42	75	34	4275-34-366	318270	1058799	293.9
42	75	34	4275-34-367	318280	1058747	294
42	75	34	4275-34-368	318117	1059297	295
42	75	34	4275-34-369	317966	1058946	274.9
42	75	34	4275-34-37	318120	1057250	
42	75	34	4275-34-370	317575	1059360	297.9
42	75	34	4275-34-371	317559	1059179	274.9
42	75	34	4275-34-372	317627	1059357	295
42	75	34	4275-34-373	318416	1057845	218
42	75	34	4275-34-374	318016	1057853	217
42	75	34	4275-34-375	317916	1057946	217.8
42	75	34	4275-34-376	317809	1057844	217
42	75	34	4275-34-377	317665	1057845	217.9
42	75	34	4275-34-378	317664	1057946	217
42	75	34	4275-34-379	317613	1058000	210.9
42	75	34	4275-34-38	318520	1056850	
42	75	34	4275-34-380	317709	1058001	215
42	75	34	4275-34-381	317760	1057996	218
42	75	34	4275-34-382	317466	1057997	217.9
42	75	34	4275-34-383	317723	1056452	
42	75	34	4275-34-384	317413	1058000	217.9
42	75	34	4275-34-385	317313	1057952	217.9

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-386	317212	1057841	213
42	75	34	4275-34-387	317200	1057750	217.9
42	75	34	4275-34-388	317183	1057641	218
42	75	34	4275-34-389	317155	1057545	218
42	75	34	4275-34-39	319520	1056850	
42	75	34	4275-34-390	317256	1057559	196.9
42	75	34	4275-34-391	317352	1057541	
42	75	34	4275-34-392	317469	1057645	216.9
42	75	34	4275-34-393	317605	1057734	216.9
42	75	34	4275-34-394	318521	1057450	218
42	75	34	4275-34-395	318416	1057252	218
42	75	34	4275-34-396	317900	1056840	
42	75	34	4275-34-397	317318	1058001	210.9
42	75	34	4275-34-398	317219	1057948	229.9
42	75	34	4275-34-399	317265	1057843	218.9
42	75	34	4275-34-4	319520	1056450	
42	75	34	4275-34-40	319720	1057250	
42	75	34	4275-34-400	317250	1057746	210.8
42	75	34	4275-34-401	317286	1057694	216.8
42	75	34	4275-34-402	317335	1057646	218
42	75	34	4275-34-403	317384	1057597	217
42	75	34	4275-34-404	317512	1057695	218
42	75	34	4275-34-405	317557	1057739	218.9
42	75	34	4275-34-406	317612	1057792	217.9
42	75	34	4275-34-407	317664	1057898	213.7
42	75	34	4275-34-4073	318216	1058300	397.4
42	75	34	4275-34-4074	318068.8	1058710	395.1
42	75	34	4275-34-4075	318069.8	1058354	397
42	75	34	4275-34-4076	318070.9	1058203	397.5
42	75	34	4275-34-4077	318170.9	1058203	397.5
42	75	34	4275-34-4078	318170.9	1058153	397.2
42	75	34	4275-34-4079	317920.9	1058203	396.3
42	75	34	4275-34-408	316956	1057535	187
42	75	34	4275-34-4080	317769.9	1058156	397.9
42	75	34	4275-34-4081	317872.6	1058306	397.1
42	75	34	4275-34-4082	317900.6	1058402	394.2
42	75	34	4275-34-4083	317669.9	1059006	398.4
42	75	34	4275-34-4084	317769.9	1059108	396.5
42	75	34	4275-34-4085	317949.9	1059373	397
42	75	34	4275-34-4086	317125.9	1059438	363.9
42	75	34	4275-34-4087	317719.4	1059698	396.2
42	75	34	4275-34-4088	317314.9	1059958	396.5
42	75	34	4275-34-4089	317873.8	1059855	396.6
42	75	34	4275-34-409	317240	1057696	215.9

Table 2.6-1 Moore Ranch Drill Holes

TWN	RNG	SECT.	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-4090	317874.2	1059963	397.8
42	75	34	4275-34-4091	317867.3	1060110	397.9
42	75	34	4275-34-4092	317971.3	1060203	395.8
42	75	34	4275-34-4093	318136.9	1060235	398.9
42	75	34	4275-34-4094	317934.7	1060491	396.3
42	75	34	4275-34-4095	317809.6	1060749	397.7
42	75	34	4275-34-41	319920	1056850	
42	75	34	4275-34-410	317433	1057593	214
42	75	34	4275-34-411	317333	1057587	216.9
42	75	34	4275-34-412	317263	1057948	215
42	75	34	4275-34-4129	318905.6	1060121	805.7
42	75	34	4275-34-413	317316	1057897	214.9
42	75	34	4275-34-4130	318931.5	1060317	790.7
42	75	34	4275-34-4131	318966.2	1060607	802.5
42	75	34	4275-34-4132	318851.4	1059823	803.7
42	75	34	4275-34-4133	318818.8	1059631	802.1
42	75	34	4275-34-4134	319120.5	1059551	792.4
42	75	34	4275-34-4135	319070.9	1059380	794.3
42	75	34	4275-34-4136	319254.1	1059331	799.6
42	75	34	4275-34-4137	319217.7	1059146	791.8
42	75	34	4275-34-414	317262	1057894	217
42	75	34	4275-34-4143	318150.3	1057985	401.8
42	75	34	4275-34-4144	318234.9	1057967	402.2
42	75	34	4275-34-4145	319812.9	1056819	301.3
42	75	34	4275-34-4146	319426.7	1056804	303.1
42	75	34	4275-34-4147	317665.3	1058086	401.7
42	75	34	4275-34-4148	317507.7	1057981	401.6
42	75	34	4275-34-415	317254	1057797	213.9
42	75	34	4275-34-4158	317978.9	1058361	401.5
42	75	34	4275-34-4159	317918.6	1058498	405.4
42	75	34	4275-34-416	317230	1057643	214
42	75	34	4275-34-4160	317998.7	1058817	402.5
42	75	34	4275-34-4161	317876.3	1059140	402
42	75	34	4275-34-4162	317805.7	1059590	401.9
42	75	34	4275-34-4163	317947.5	1060311	400.9
42	75	34	4275-34-417	317269	1057596	211
42	75	34	4275-34-418	317304	1057541	196.9
42	75	34	4275-34-419	317426	1057539	195.9
42	75	34	4275-34-42	319920	1056450	
42	75	34	4275-34-420	317486	1057550	194.8
42	75	34	4275-34-421	317487	1057587	211
42	75	34	4275-34-422	317565	1057692	216
42	75	34	4275-34-423	317658	1057797	216
42	75	34	4275-34-424	317713	1057896	215.9

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-425	317768	1057945	
42	75	34	4275-34-426	317808	1057996	215.9
42	75	34	4275-34-427	317413	1058049	214
42	75	34	4275-34-428	317364	1058052	215
42	75	34	4275-34-429	317261	1058001	210.9
42	75	34	4275-34-43	318920	1057050	
42	75	34	4275-34-430	317362	1057995	214
42	75	34	4275-34-431	319321	1056051	
42	75	34	4275-34-432	319816	1056350	225.7
42	75	34	4275-34-433	319924	1056354	226
42	75	34	4275-34-434	320026	1056249	232.9
42	75	34	4275-34-435	319831	1056151	211.8
42	75	34	4275-34-436	316921	1057646	216
42	75	34	4275-34-437	316923	1057245	194.9
42	75	34	4275-34-438	316924	1056846	191.9
42	75	34	4275-34-439	316934	1056438	193
42	75	34	4275-34-44	318920	1056650	
42	75	34	4275-34-440	316925	1056047	172
42	75	34	4275-34-441	317322	1056048	163.9
42	75	34	4275-34-442	317326	1055449	167.8
42	75	34	4275-34-443	317730	1055451	171.7
42	75	34	4275-34-444	318122	1055447	173.8
42	75	34	4275-34-445	318520	1055450	173.9
42	75	34	4275-34-446	318921	1055449	177
42	75	34	4275-34-447	319518	1055449	195.8
42	75	34	4275-34-448	317323	1057246	191.9
42	75	34	4275-34-449	316522	1057647	215.9
42	75	34	4275-34-45	318520	1057650	
42	75	34	4275-34-450	317111	1058056	211.9
42	75	34	4275-34-451	316725	1058048	215
42	75	34	4275-34-452	318120	1059400	297.8
42	75	34	4275-34-453	318070	1059400	295.4
42	75	34	4275-34-454	318020	1059400	297.2
42	75	34	4275-34-455	317770	1059300	
42	75	34	4275-34-456	317870	1059300	297
42	75	34	4275-34-457	317770	1059350	299
42	75	34	4275-34-458	317520	1059350	297.9
42	75	34	4275-34-459	317520	1059000	277.9
42	75	34	4275-34-46	318120	1057650	
42	75	34	4275-34-460	317520	1058800	276.7
42	75	34	4275-34-461	317570	1058800	276.8
42	75	34	4275-34-462	317470	1058750	277
42	75	34	4275-34-463	317470	1058800	277
42	75	34	4275-34-464	317520	1058700	275.5

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-465	317470	1058700	276.9
42	75	34	4275-34-466	317620	1058700	276
42	75	34	4275-34-467	317670	1058700	278
42	75	34	4275-34-468	317670	1058550	258
42	75	34	4275-34-469	317620	1058550	255.9
42	75	34	4275-34-47	317918	1060345	
42	75	34	4275-34-470	317470	1058100	236.9
42	75	34	4275-34-471	317820	1058050	234
42	75	34	4275-34-472	318070	1058850	274.9
42	75	34	4275-34-473	318170	1058550	274.9
42	75	34	4275-34-474	318170	1058450	277
42	75	34	4275-34-475	318170	1058400	275
42	75	34	4275-34-476	318270	1058350	276
42	75	34	4275-34-477	318270	1058400	276
42	75	34	4275-34-478	318270	1058450	275.9
42	75	34	4275-34-479	318320	1058300	274.9
42	75	34	4275-34-48	317619	1059044	
42	75	34	4275-34-480	318320	1058150	236
42	75	34	4275-34-481	318170	1058050	235
42	75	34	4275-34-482	317420	1058800	275.4
42	75	34	4275-34-483	317420	1058850	277.8
42	75	34	4275-34-484	317470	1058850	272.7
42	75	34	4275-34-485	317420	1058700	273.9
42	75	34	4275-34-486	317420	1058650	276.9
42	75	34	4275-34-487	317470	1058650	275.9
42	75	34	4275-34-488	317570	1058650	274.8
42	75	34	4275-34-489	317670	1058650	274.9
42	75	34	4275-34-49	317520	1058945	
42	75	34	4275-34-490	317670	1058600	276.9
42	75	34	4275-34-491	317633	1058593	275.9
42	75	34	4275-34-492	317720	1058600	275.9
42	75	34	4275-34-493	318224	1058494	255.5
42	75	34	4275-34-494	318273	1058502	256.6
42	75	34	4275-34-495	318320	1058500	255.9
42	75	34	4275-34-496	318320	1058450	256.9
42	75	34	4275-34-497	318320	1058400	257.9
42	75	34	4275-34-498	317570	1058600	277.8
42	75	34	4275-34-499	317520	1058600	276.9
42	75	34	4275-34-5	318520	1057250	
42	75	34	4275-34-50	317633	1058835	
42	75	34	4275-34-500	317570	1058550	277.9
42	75	34	4275-34-501	317620	1058850	276.7
42	75	34	4275-34-502	317620	1058650	275.9
42	75	34	4275-34-503	317221	1058496	272.7

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-504	317421	1058497	276.7
42	75	34	4275-34-505	317417	1058295	275
42	75	34	4275-34-506	317520	1058550	249.8
42	75	34	4275-34-507	317520	1058500	255
42	75	34	4275-34-508	317570	1058500	255.8
42	75	34	4275-34-509	317223	1059094	275.6
42	75	34	4275-34-51	318120	1058848	
42	75	34	4275-34-510	317420	1058900	275.6
42	75	34	4275-34-511	317470	1058900	275.7
42	75	34	4275-34-512	318320	1056050	
42	75	34	4275-34-513	319720	1056050	
42	75	34	4275-34-514	319120	1055850	
42	75	34	4275-34-515	319320	1055850	
42	75	34	4275-34-516	318720	1056850	
42	75	34	4275-34-517	319220	1056450	
42	75	34	4275-34-518	319420	1056450	
42	75	34	4275-34-519	319520	1056550	
42	75	34	4275-34-52	318221	1058747	
42	75	34	4275-34-520	320020	1056150	
42	75	34	4275-34-521	317220	1059600	
42	75	34	4275-34-522	317216	1060338	
42	75	34	4275-34-523	316420	1059600	
42	75	34	4275-34-524	316420	1058800	
42	75	34	4275-34-525	316420	1058000	
42	75	34	4275-34-526	316820	1057800	
42	75	34	4275-34-527	316420	1057200	
42	75	34	4275-34-528	315620	1058800	
42	75	34	4275-34-529	315620	1058400	
42	75	34	4275-34-53	317823	1058747	
42	75	34	4275-34-530	318370	1058800	
42	75	34	4275-34-531	315620	1056800	
42	75	34	4275-34-532	315620	1057600	
42	75	34	4275-34-533	315620	1060000	
42	75	34	4275-34-534	315620	1059200	
42	75	34	4275-34-535	317820	1060350	
42	75	34	4275-34-536	317820	1060150	
42	75	34	4275-34-537	317820	1059950	
42	75	34	4275-34-538	318020	1060050	
42	75	34	4275-34-539	317920	1060050	
42	75	34	4275-34-54	317720	1058746	
42	75	34	4275-34-540	317920	1059850	
42	75	34	4275-34-541	317720	1059950	
42	75	34	4275-34-542	317520	1059750	
42	75	34	4275-34-543	317520	1059550	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-544	317620	1059450	
42	75	34	4275-34-545	316420	1060400	
42	75	34	4275-34-546	317220	1058800	
42	75	34	4275-34-547	317820	1057650	
42	75	34	4275-34-548	317970	1060100	
42	75	34	4275-34-549	317720	1060350	
42	75	34	4275-34-55	318221	1058648	
42	75	34	4275-34-550	317920	1059950	
42	75	34	4275-34-551	318020	1059850	
42	75	34	4275-34-552	317520	1059650	
42	75	34	4275-34-553	317420	1059550	
42	75	34	4275-34-554	317420	1059700	
42	75	34	4275-34-555	317420	1059400	
42	75	34	4275-34-556	317320	1059600	
42	75	34	4275-34-557	317320	1059450	
42	75	34	4275-34-558	317370	1057900	
42	75	34	4275-34-559C	317470	1057900	
42	75	34	4275-34-56	318120	1058548	
42	75	34	4275-34-560C	317576	1057895	
42	75	34	4275-34-561	316920	1058050	
42	75	34	4275-34-562	316420	1057800	
42	75	34	4275-34-563	317020	1057800	
42	75	34	4275-34-564	316880	1057700	
42	75	34	4275-34-565	317220	1058600	
42	75	34	4275-34-566	317220	1059000	
42	75	34	4275-34-567	315620	1058800	
42	75	34	4275-34-568	318920	1056150	
42	75	34	4275-34-569	317920	1056050	
42	75	34	4275-34-57	318020	1058446	
42	75	34	4275-34-570	317470	1059550	
42	75	34	4275-34-571	317520	1059600	
42	75	34	4275-34-572	317270	1059600	
42	75	34	4275-34-573	317620	1059750	
42	75	34	4275-34-574	317770	1059850	
42	75	34	4275-34-575	317970	1059950	
42	75	34	4275-34-576	317970	1060050	
42	75	34	4275-34-577	317920	1060150	
42	75	34	4275-34-578	318071	1060991	
42	75	34	4275-34-579	318020	1060150	
42	75	34	4275-34-58	317921	1058446	
42	75	34	4275-34-580	317770	1060050	
42	75	34	4275-34-581	317620	1059650	
42	75	34	4275-34-582	317620	1059550	
42	75	34	4275-34-583	317720	1059650	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-584	317320	1058450	
42	75	34	4275-34-585	316824	1057741	
42	75	34	4275-34-586	317970	1060150	
42	75	34	4275-34-587	317770	1060100	
42	75	34	4275-34-588	317770	1060000	
42	75	34	4275-34-589	317720	1060050	
42	75	34	4275-34-59	317821	1058448	
42	75	34	4275-34-590	317670	1059750	
42	75	34	4275-34-591	317670	1059650	
42	75	34	4275-34-592	317470	1059600	
42	75	34	4275-34-593	317420	1059500	
42	75	34	4275-34-594	317870	1060150	
42	75	34	4275-34-595	317870	1060400	
42	75	34	4275-34-596	317964	1060394	
42	75	34	4275-34-597	318508	1060394	
42	75	34	4275-34-598	318170	1060400	
42	75	34	4275-34-599	317870	1060300	
42	75	34	4275-34-6	318019	1060645	
42	75	34	4275-34-60	317721	1058347	
42	75	34	4275-34-600	317971	1060293	
42	75	34	4275-34-601	318070	1060296	
42	75	34	4275-34-602	318177	1060304	
42	75	34	4275-34-603	317857	1060488	
42	75	34	4275-34-604	317720	1059800	
42	75	34	4275-34-605	317820	1059900	
42	75	34	4275-34-606	317920	1060000	
42	75	34	4275-34-607	318120	1060150	
42	75	34	4275-34-608	317720	1060450	
42	75	34	4275-34-609	317770	1060150	
42	75	34	4275-34-61	317821	1058249	
42	75	34	4275-34-610	317720	1060100	
42	75	34	4275-34-611	317820	1060100	
42	75	34	4275-34-612	317870	1060050	
42	75	34	4275-34-613	317620	1059600	
42	75	34	4275-34-614	317520	1059450	
42	75	34	4275-34-615	317670	1059800	
42	75	34	4275-34-616	317870	1060200	
42	75	34	4275-34-617	317320	1059350	
42	75	34	4275-34-618	317220	1059450	
42	75	34	4275-34-619	317220	1058300	
42	75	34	4275-34-62	317922	1058147	
42	75	34	4275-34-626	317220	1060000	
42	75	34	4275-34-627C	317870	1058600	
42	75	34	4275-34-628C	317970	1058600	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-629C	318070	1058600	
42	75	34	4275-34-63	318320	1057650	
42	75	34	4275-34-631	317222	1057895	
42	75	34	4275-34-632	317210	1057794	
42	75	34	4275-34-633	317642	1057969	
42	75	34	4275-34-634	317568	1057653	
42	75	34	4275-34-635	317546	1057596	
42	75	34	4275-34-636	317543	1057553	
42	75	34	4275-34-637	317566	1057842	
42	75	34	4275-34-638	317774	1057884	
42	75	34	4275-34-639	317774	1057884	
42	75	34	4275-34-64	318320	1057250	
42	75	34	4275-34-640	317120	1059600	
42	75	34	4275-34-641	316820	1059200	
42	75	34	4275-34-642	317220	1059050	
42	75	34	4275-34-643	317220	1058650	
42	75	34	4275-34-644	317820	1060500	
42	75	34	4275-34-645	317870	1060550	
42	75	34	4275-34-646	318170	1060500	
42	75	34	4275-34-647	318120	1060550	
42	75	34	4275-34-648	317771	1060197	
42	75	34	4275-34-649	317664	1059845	
42	75	34	4275-34-65	318720	1057050	
42	75	34	4275-34-650	317667	1059691	
42	75	34	4275-34-651	317717	1059999	
42	75	34	4275-34-652	317915	1059750	
42	75	34	4275-34-653	318025	1060553	
42	75	34	4275-34-654	317716	1060145	
42	75	34	4275-34-655	318199	1060406	
42	75	34	4275-34-656	318168	1060452	
42	75	34	4275-34-657	318271	1060353	
42	75	34	4275-34-658	318239	1060307	
42	75	34	4275-34-659	318021	1060101	
42	75	34	4275-34-66	319920	1056650	
42	75	34	4275-34-660	318065	1060053	
42	75	34	4275-34-661	317966	1059853	
42	75	34	4275-34-662	317974	1059900	
42	75	34	4275-34-663	317819	1059794	
42	75	34	4275-34-664	317776	1059741	
42	75	34	4275-34-665	317761	1060437	
42	75	34	4275-34-666	317218	1058548	
42	75	34	4275-34-667	317020	1057844	
42	75	34	4275-34-668	317174	1057841	
42	75	34	4275-34-669	317170	1057896	

Table 2.6-1 Moore Ranch Drill Holes

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-67	319520	1056650	
42	75	34	4275-34-670	317165	1057948	
42	75	34	4275-34-671	317570	1057997	
42	75	34	4275-34-672	317510	1057790	
42	75	34	4275-34-673	316427	1057850	
42	75	34	4275-34-674	318076	1060554	
42	75	34	4275-34-675	317972	1060548	
42	75	34	4275-34-676	317918	1060548	
42	75	34	4275-34-677	317761	1060344	
42	75	34	4275-34-678	317814	1060390	
42	75	34	4275-34-679	317905	1060395	
42	75	34	4275-34-68	319320	1056650	
42	75	34	4275-34-680	318018	1060000	
42	75	34	4275-34-681	317318	1058303	
42	75	34	4275-34-682	317976	1060594	
42	75	34	4275-34-683	317765	1059644	
42	75	34	4275-34-684	317717	1059589	
42	75	34	4275-34-685	317112	1059693	
42	75	34	4275-34-686	317122	1059501	
42	75	34	4275-34-687	316816	1059596	
42	75	34	4275-34-688	317171	1057795	
42	75	34	4275-34-689	317123	1057793	
42	75	34	4275-34-69	318920	1056850	
42	75	34	4275-34-690	317120	1057841	
42	75	34	4275-34-691	317116	1057894	
42	75	34	4275-34-692	315600	1058600	
42	75	34	4275-34-693	317212	1060143	
42	75	34	4275-34-694	317220	1059747	
42	75	34	4275-34-695	317566	1059494	
42	75	34	4275-34-696	317023	1058700	
42	75	34	4275-34-697	316920	1057743	
42	75	34	4275-34-698	316637	1057692	
42	75	34	4275-34-699C	317644	1058545	
42	75	34	4275-34-7	318119	1060646	
42	75	34	4275-34-70	317914	1060650	
42	75	34	4275-34-700	317130	1059393	
42	75	34	4275-34-701	317027	1059490	
42	75	34	4275-34-702	317012	1059597	
42	75	34	4275-34-703	317474	1059496	
42	75	34	4275-34-704	317379	1059404	
42	75	34	4275-34-705	316481	1057796	
42	75	34	4275-34-706	316376	1057803	
42	75	34	4275-34-707	317034	1059385	
42	75	34	4275-34-708	317135	1059294	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-709	317215	1060048	
42	75	34	4275-34-71	317819	1060444	
42	75	34	4275-34-710	316797	1060368	
42	75	34	4275-34-711	316809	1059979	
42	75	34	4275-34-712	317112	1059644	
42	75	34	4275-34-713	317224	1059670	
42	75	34	4275-34-714	317370	1059457	
42	75	34	4275-34-715	317417	1060167	
42	75	34	4275-34-716	316917	1058700	
42	75	34	4275-34-717	317015	1058801	
42	75	34	4275-34-718	317029	1058604	
42	75	34	4275-34-719C	317528	1058762	
42	75	34	4275-34-72	317823	1060045	
42	75	34	4275-34-720	317694	1057897	
42	75	34	4275-34-721	316986	1059383	
42	75	34	4275-34-722	317040	1059287	
42	75	34	4275-34-723	317418	1059600	
42	75	34	4275-34-724	316912	1058802	
42	75	34	4275-34-725	316815	1058709	
42	75	34	4275-34-726	316914	1058607	
42	75	34	4275-34-727	317125	1059557	
42	75	34	4275-34-728	317216	1059842	
42	75	34	4275-34-729	317311	1059789	
42	75	34	4275-34-73	317824	1059844	
42	75	34	4275-34-730	317325	1059690	
42	75	34	4275-34-731	317069	1059600	
42	75	34	4275-34-732	317169	1059602	
42	75	34	4275-34-733	317762	1060506	
42	75	34	4275-34-734	317760	1060392	
42	75	34	4275-34-735	317713	1060286	
42	75	34	4275-34-736	317706	1060172	
42	75	34	4275-34-737	318179	1060205	
42	75	34	4275-34-738	318176	1060254	
42	75	34	4275-34-739	318277	1060305	
42	75	34	4275-34-74	317923	1059445	
42	75	34	4275-34-740	318260	1060408	
42	75	34	4275-34-741	318215	1060454	
42	75	34	4275-34-742	318181	1060563	
42	75	34	4275-34-743	318027	1060600	
42	75	34	4275-34-744	317923	1060587	
42	75	34	4275-34-745	317977	1060642	
42	75	34	4275-34-746	318069	1060110	
42	75	34	4275-34-747	318064	1060005	
42	75	34	4275-34-748	318063	1059956	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-749	318016	1059898	
42	75	34	4275-34-75	317720	1059247	
42	75	34	4275-34-750	317967	1059799	
42	75	34	4275-34-751	317921	1059797	
42	75	34	4275-34-752	317862	1059747	
42	75	34	4275-34-753	317816	1059696	
42	75	34	4275-34-754	317815	1059645	
42	75	34	4275-34-755	317760	1059585	
42	75	34	4275-34-756	317666	1059593	
42	75	34	4275-34-757	317569	1059544	
42	75	34	4275-34-758	316992	1059283	
42	75	34	4275-34-759	317046	1059188	
42	75	34	4275-34-76	317619	1059147	
42	75	34	4275-34-760	316929	1059193	
42	75	34	4275-34-761	317610	1059690	
42	75	34	4275-34-762	317465	1059648	
42	75	34	4275-34-763	317662	1059896	
42	75	34	4275-34-764	318070	1060155	
42	75	34	4275-34-765	318113	1060056	
42	75	34	4275-34-766	317519	1059497	
42	75	34	4275-34-767	317171	1059503	
42	75	34	4275-34-768	317031	1059436	
42	75	34	4275-34-769	317088	1059290	
42	75	34	4275-34-77	317822	1059047	
42	75	34	4275-34-770	317079	1059549	
42	75	34	4275-34-771	317166	1059680	
42	75	34	4275-34-772	317276	1059681	
42	75	34	4275-34-773	317071	1059500	
42	75	34	4275-34-774	317131	1059348	
42	75	34	4275-34-775	317182	1059396	
42	75	34	4275-34-776	317046	1059236	
42	75	34	4275-34-777	316982	1059189	
42	75	34	4275-34-778	317315	1059900	
42	75	34	4275-34-779	317176	1059546	
42	75	34	4275-34-78	317921	1059047	
42	75	34	4275-34-780	317414	1060103	
42	75	34	4275-34-781	317323	1060101	
42	75	34	4275-34-782	317422	1060300	
42	75	34	4275-34-783	317319	1060157	
42	75	34	4275-34-784	317657	1059948	
42	75	34	4275-34-785	317763	1060289	
42	75	34	4275-34-786	317716	1060244	
42	75	34	4275-34-787	317719	1059901	
42	75	34	4275-34-788	317865	1059699	

Table 2.6-1 Moore Ranch Drill Holes

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-789	317467	1059448	
42	75	34	4275-34-79	317626	1058746	
42	75	34	4275-34-790	316964	1058802	
42	75	34	4275-34-791	316974	1058700	
42	75	34	4275-34-792	316812	1058609	
42	75	34	4275-34-793	316823	1060625	
42	75	34	4275-34-794	317270	1059751	
42	75	34	4275-34-795	317162	1059740	
42	75	34	4275-34-796	317970	1059746	
42	75	34	4275-34-797	318020	1059789	
42	75	34	4275-34-798	317756	1059535	
42	75	34	4275-34-799	318070	1060647	
42	75	34	4275-34-8	318018	1060446	
42	75	34	4275-34-80	317723	1058648	
42	75	34	4275-34-800	317869	1060580	
42	75	34	4275-34-801	317449	1060642	
42	75	34	4275-34-802	317646	1060652	
42	75	34	4275-34-803	317244	1060639	
42	75	34	4275-34-804	317711	1060389	
42	75	34	4275-34-805	317369	1060162	
42	75	34	4275-34-806	317425	1060344	
42	75	34	4275-34-807	317818	1060573	
42	75	34	4275-34-808	317350	1060639	
42	75	34	4275-34-809	317323	1060297	
42	75	34	4275-34-81	317822	1058549	
42	75	34	4275-34-810	317322	1060000	
42	75	34	4275-34-811	317268	1059900	
42	75	34	4275-34-812	317216	1059504	
42	75	34	4275-34-813	317083	1059340	
42	75	34	4275-34-814	317076	1059433	
42	75	34	4275-34-815	316980	1059093	
42	75	34	4275-34-816	316873	1059099	
42	75	34	4275-34-817	318220	1060500	
42	75	34	4275-34-818	317764	1060241	
42	75	34	4275-34-819	317816	1060288	
42	75	34	4275-34-82	318120	1058550	
42	75	34	4275-34-820	317672	1060197	
42	75	34	4275-34-821	317447	1060496	
42	75	34	4275-34-822	317110	1059735	
42	75	34	4275-34-823	317548	1060646	
42	75	34	4275-34-824	317045	1060638	
42	75	34	4275-34-825	316425	1060609	
42	75	34	4275-34-826	317372	1060103	
42	75	34	4275-34-827	317414	1060007	

Table 2.6-1 Moore Ranch Drill Holes

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-828	317267	1059805	
42	75	34	4275-34-829	317113	1058798	
42	75	34	4275-34-83	318220	1058450	
42	75	34	4275-34-830	317026	1058655	
42	75	34	4275-34-831	317573	1059450	
42	75	34	4275-34-832	317771	1059442	
42	75	34	4275-34-833	317667	1059545	
42	75	34	4275-34-834	318057	1059632	
42	75	34	4275-34-835	317349	1060498	
42	75	34	4275-34-836	317545	1060499	
42	75	34	4275-34-837	317366	1060004	
42	75	34	4275-34-838	317216	1059899	
42	75	34	4275-34-839	317103	1059576	
42	75	34	4275-34-84	318220	1058350	
42	75	34	4275-34-840	316422	1058397	
42	75	34	4275-34-841	317130	1059415	
42	75	34	4275-34-842	317035	1059342	
42	75	34	4275-34-843	317818	1060621	
42	75	34	4275-34-844	317870	1060631	
42	75	34	4275-34-845	317767	1060573	
42	75	34	4275-34-846	317376	1060301	
42	75	34	4275-34-847	317466	1060168	
42	75	34	4275-34-848	317565	1060103	
42	75	34	4275-34-849	317363	1059900	
42	75	34	4275-34-85	318121	1058246	
42	75	34	4275-34-850	317465	1059843	
42	75	34	4275-34-851	316434	1059929	
42	75	34	4275-34-852	316826	1058310	
42	75	34	4275-34-853	317393	1060498	
42	75	34	4275-34-854	317291	1060500	
42	75	34	4275-34-855	316927	1059094	
42	75	34	4275-34-856	317656	1059580	
42	75	34	4275-34-857	317566	1060297	
42	75	34	4275-34-858	317497	1060643	
42	75	34	4275-34-859	317661	1060431	
42	75	34	4275-34-86	317720	1058244	
42	75	34	4275-34-860	317870	1059446	
42	75	34	4275-34-861	317874	1059537	
42	75	34	4275-34-862	318372	1057853	
42	75	34	4275-34-863	318474	1057851	
42	75	34	4275-34-864	318025	1057649	
42	75	34	4275-34-865	317870	1057996	
42	75	34	4275-34-866	316931	1059145	
42	75	34	4275-34-867	316982	1059143	

Table 2.6-1 Moore Ranch Drill Holes

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-868	317034	1059141	
42	75	34	4275-34-869	317371	1060210	
42	75	34	4275-34-87	317719	1058147	
42	75	34	4275-34-870	317420	1060216	
42	75	34	4275-34-871	317609	1060427	
42	75	34	4275-34-872	317393	1060641	
42	75	34	4275-34-873	317272	1060014	
42	75	34	4275-34-874	316894	1058948	
42	75	34	4275-34-875	319026	1056808	
42	75	34	4275-34-876C	317080	1059388	
42	75	34	4275-34-877C	317219	1059710	
42	75	34	4275-34-878	316789	1058969	
42	75	34	4275-34-879	316839	1058959	
42	75	34	4275-34-88	317820	1058147	
42	75	34	4275-34-880	316695	1058985	
42	75	34	4275-34-881C	317770	1059700	
42	75	34	4275-34-882C	317920	1060100	
42	75	34	4275-34-883	317870	1060450	
42	75	34	4275-34-884C	318070	1060450	
42	75	34	4275-34-885	317969	1058448	
42	75	34	4275-34-886	317968	1058383	
42	75	34	4275-34-887	317823	1058399	
42	75	34	4275-34-888	317872	1058493	
42	75	34	4275-34-89	318023	1058146	
42	75	34	4275-34-891C	317774.9	1059106	
42	75	34	4275-34-892C	317767.7	1058212	
42	75	34	4275-34-893	317842	1058421	
42	75	34	4275-34-894C	317768	1058202	
42	75	34	4275-34-9	318118	1060446	
42	75	34	4275-34-90	317922	1058047	
42	75	34	4275-34-91	319920	1056050	
42	75	34	4275-34-92	317822	1060247	
42	75	34	4275-34-93	317823	1059744	
42	75	34	4275-34-94	317728	1059743	
42	75	34	4275-34-95	317721	1059346	
42	75	34	4275-34-96	317617	1059247	
42	75	34	4275-34-97	318020	1059045	
42	75	34	4275-34-98	317621	1058146	
42	75	34	4275-34-99	317719	1058047	
42	75	34	4275-34-KM1	315656	1059616	
42	75	34	4275-34-KM10	318397	1059305	
42	75	34	4275-34-KM11	315751	1060701	
42	75	34	4275-34-KM12	318003	1059631	
42	75	34	4275-34-KM13	317895	1059630	

Table 2.6-1 Moore Ranch Drill Holes

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-KM14	318209	1059309	
42	75	34	4275-34-KM15	317997	1059308	
42	75	34	4275-34-KM16	318141	1059915	
42	75	34	4275-34-KM17	317853	1059917	
42	75	34	4275-34-KM18	317723	1060509	
42	75	34	4275-34-KM19	317588	1058713	
42	75	34	4275-34-KM2	318362	1059614	
42	75	34	4275-34-KM20	318030	1058708	
42	75	34	4275-34-KM21	318000	1059363	
42	75	34	4275-34-KM22	317949	1059315	
42	75	34	4275-34-KM23	317995	1059260	
42	75	34	4275-34-KM24	318133	1060515	
42	75	34	4275-34-KM25	317624	1059919	
42	75	34	4275-34-KM26	317950	1059266	
42	75	34	4275-34-KM27	318035	1060514	
42	75	34	4275-34-KM28	318027	1058762	
42	75	34	4275-34-KM29	317979	1058711	
42	75	34	4275-34-KM3	316030	1059399	
42	75	34	4275-34-KM30	318040	1058657	
42	75	34	4275-34-KM31	317893	1059262	
42	75	34	4275-34-KM32	317951	1059163	
42	75	34	4275-34-KM33	318086	1060514	
42	75	34	4275-34-KM34	317811	1058984	
42	75	34	4275-34-KM35	318016	1058992	
42	75	34	4275-34-KM36	317915	1058984	
42	75	34	4275-34-KM37	318123	1058385	
42	75	34	4275-34-KM38	318020	1058387	
42	75	34	4275-34-KM39	317920	1058385	
42	75	34	4275-34-KM4	316616	1059376	
42	75	34	4275-34-KM40	318207	1058107	
42	75	34	4275-34-KM41	318020	1058097	
42	75	34	4275-34-KM42	317816	1058083	
42	75	34	4275-34-KM43	318127	1060203	
42	75	34	4275-34-KM44	318037	1060199	
42	75	34	4275-34-KM45	317924	1060196	
42	75	34	4275-34-KM46	318077	1060604	
42	75	34	4275-34-KM47	317981	1060514	
42	75	34	4275-34-KM48	317715	1058982	
42	75	34	4275-34-KM5	317226	1059320	
42	75	34	4275-34-KM6	317808	1059350	
42	75	34	4275-34-KM7	318110	1059631	
42	75	34	4275-34-KM8	318732	1059583	
42	75	34	4275-34-KM9	318408	1059897	
42	75	34	4275-34-MW-3	317949.4	1060552	317.8

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	34	4275-34-MW-4	318698.6	1056282	218.5
42	75	34	4275-34-MW-8	317924.6	1057973	218.5
42	75	34	4275-34-MW-9	317101.6	1059208	276.7
42	75	34	4275-34-OMW-3	317939.3	1060553	248.6
42	75	34	4275-34-OMW-4	318688.7	1056283	119.5
42	75	34	4275-34-UMW-3	317959.6	1060551	378.9
42	75	34	4275-34-UMW-4	318709.4	1056283	297.9
42	75	35	4275-35-1	322665	1058014	
42	75	35	4275-35-10	320529	1059248	
42	75	35	4275-35-100	323322	1058451	
42	75	35	4275-35-1000	320460	1056497	236
42	75	35	4275-35-1001	320576	1056501	235.9
42	75	35	4275-35-1002	320672	1056602	234.9
42	75	35	4275-35-1003	320770	1056705	233.9
42	75	35	4275-35-1004	320572	1056846	235
42	75	35	4275-35-1005	321025	1057149	235.9
42	75	35	4275-35-1006	322968	1057205	216
42	75	35	4275-35-1007	323027	1057701	235.8
42	75	35	4275-35-1008	323074	1057749	256.9
42	75	35	4275-35-1009	322613	1057099	193.9
42	75	35	4275-35-101	323124	1058656	
42	75	35	4275-35-1010	322654	1057058	188
42	75	35	4275-35-1011	322706	1057056	190
42	75	35	4275-35-1012	322758	1057057	192
42	75	35	4275-35-1013	322808	1057060	191
42	75	35	4275-35-1014	320411	1056601	236.9
42	75	35	4275-35-1015	322607	1057051	199.9
42	75	35	4275-35-1016	322621	1057150	150
42	75	35	4275-35-1017	322677	1057201	
42	75	35	4275-35-1018	322690	1057249	189
42	75	35	4275-35-1019	322974	1057253	
42	75	35	4275-35-102	322724	1058253	
42	75	35	4275-35-1020	320360	1056597	237
42	75	35	4275-35-1021	320352	1056501	228.9
42	75	35	4275-35-1022	320394	1056451	235.7
42	75	35	4275-35-1023	320446	1056444	224.9
42	75	35	4275-35-1024	320577	1056449	232
42	75	35	4275-35-1025	320626	1056449	228
42	75	35	4275-35-1026	320223	1056751	217
42	75	35	4275-35-1027	320230	1056703	217.9
42	75	35	4275-35-1028	320179	1056703	232.9
42	75	35	4275-35-1029	320120	1056650	220.9
42	75	35	4275-35-103	323720	1059256	
42	75	35	4275-35-1030	320077	1056760	223

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1031	320270	1056799	237
42	75	35	4275-35-1032	321078	1056891	237
42	75	35	4275-35-1033	321108	1056898	231.8
42	75	35	4275-35-1034	321153	1056895	234
42	75	35	4275-35-1035	321228	1056897	234
42	75	35	4275-35-1036	321257	1056898	233
42	75	35	4275-35-1037	321286	1056894	225
42	75	35	4275-35-1038	321269	1056948	227.9
42	75	35	4275-35-1039	321261	1057002	236
42	75	35	4275-35-104	323323	1058656	292.6
42	75	35	4275-35-1040	320777	1057051	233
42	75	35	4275-35-1041	320881	1056902	234
42	75	35	4275-35-1042	320878	1056808	235
42	75	35	4275-35-1043	320826	1056704	235.9
42	75	35	4275-35-1044	322709	1057009	150
42	75	35	4275-35-1045	322760	1057009	192.9
42	75	35	4275-35-1046	322815	1057013	192.9
42	75	35	4275-35-1047	322857	1057061	195.9
42	75	35	4275-35-1048	323024	1057491	214
42	75	35	4275-35-1049	323079	1057572	234.9
42	75	35	4275-35-105	323122	1058454	
42	75	35	4275-35-1050	323079	1057618	230.9
42	75	35	4275-35-1051	323077	1057699	233.8
42	75	35	4275-35-1052	323120	1057802	273.9
42	75	35	4275-35-1053	323223	1057902	271.9
42	75	35	4275-35-1054	323226	1058104	269.5
42	75	35	4275-35-1055	323277	1058262	272
42	75	35	4275-35-1056	323375	1058406	149.9
42	75	35	4275-35-1057	323476	1058551	199.7
42	75	35	4275-35-1058	323371	1058757	150
42	75	35	4275-35-1059	323370	1058800	276.8
42	75	35	4275-35-106	323124	1058253	
42	75	35	4275-35-1060	323370	1058900	278
42	75	35	4275-35-1061	323375	1058955	276.9
42	75	35	4275-35-1062	323428	1058907	277.9
42	75	35	4275-35-1063	323172	1058905	271
42	75	35	4275-35-1064	322971	1058656	374
42	75	35	4275-35-1065	322829	1058197	273.9
42	75	35	4275-35-1066	322679	1058501	274.9
42	75	35	4275-35-1067	322475	1058255	274.8
42	75	35	4275-35-1068	322425	1058257	276.9
42	75	35	4275-35-1069	322428	1058211	251.6
42	75	35	4275-35-107	322824	1058153	274.8
42	75	35	4275-35-1070	322325	1058206	236.8

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1071	322275	1058205	226.8
42	75	35	4275-35-1072	322224	1058206	235.7
42	75	35	4275-35-1073	321623	1058002	233.9
42	75	35	4275-35-1074	321525	1058004	216.9
42	75	35	4275-35-1075	321325	1058006	215.8
42	75	35	4275-35-1076	321422	1057703	214.9
42	75	35	4275-35-1077	321474	1057650	214
42	75	35	4275-35-1078	321526	1057005	206.9
42	75	35	4275-35-1079	321470	1057000	211.8
42	75	35	4275-35-108	322525	1058254	
42	75	35	4275-35-1080	321426	1057002	214.9
42	75	35	4275-35-1081	321419	1056953	211.9
42	75	35	4275-35-1082	321362	1056944	215
42	75	35	4275-35-1083	323377	1059005	292.9
42	75	35	4275-35-1084	323313	1059010	291.9
42	75	35	4275-35-1085	323272	1059006	292.9
42	75	35	4275-35-1086	323271	1058955	272.9
42	75	35	4275-35-1087	321476	1056701	217.8
42	75	35	4275-35-1088	321578	1057101	216
42	75	35	4275-35-1089	321884	1056702	214.9
42	75	35	4275-35-109	323322	1059056	
42	75	35	4275-35-1090	321971	1057000	214
42	75	35	4275-35-1091	322073	1057153	213.9
42	75	35	4275-35-1092	322653	1057010	191.9
42	75	35	4275-35-1093	322653	1056959	193.9
42	75	35	4275-35-1094	322710	1056953	191.9
42	75	35	4275-35-1095	322765	1056953	190.9
42	75	35	4275-35-1096	322870	1057021	215.9
42	75	35	4275-35-1097	322921	1057014	213
42	75	35	4275-35-1098	322912	1057068	215.8
42	75	35	4275-35-1099	321372	1056904	219
42	75	35	4275-35-11	321725	1058052	
42	75	35	4275-35-110	323524	1059059	
42	75	35	4275-35-1100	321374	1056847	214
42	75	35	4275-35-1101	321927	1056804	212.7
42	75	35	4275-35-1102	322384	1057354	215
42	75	35	4275-35-1103	322685	1057308	192
42	75	35	4275-35-1104	322638	1057308	193.9
42	75	35	4275-35-1105	322631	1057261	191
42	75	35	4275-35-1106	322623	1057208	191
42	75	35	4275-35-1107	323268	1058154	249.9
42	75	35	4275-35-1108	323273	1058101	250.9
42	75	35	4275-35-1109	323281	1058056	255.9
42	75	35	4275-35-111	322426	1058053	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1110	320678	1056500	235.9
42	75	35	4275-35-1111	320671	1056443	234.9
42	75	35	4275-35-1112	320675	1056396	232.9
42	75	35	4275-35-1113	320622	1056396	229.9
42	75	35	4275-35-1114	320571	1056397	231
42	75	35	4275-35-1115	320523	1056397	236.9
42	75	35	4275-35-1116	320347	1056453	232.9
42	75	35	4275-35-1117	320305	1056548	234
42	75	35	4275-35-1118	320314	1056605	234.9
42	75	35	4275-35-1119	320277	1056705	234.7
42	75	35	4275-35-112	322225	1057954	
42	75	35	4275-35-1120	320273	1056747	235.9
42	75	35	4275-35-1121	320375	1056746	228
42	75	35	4275-35-1122	320417	1056700	233
42	75	35	4275-35-1123	320473	1056800	231.9
42	75	35	4275-35-1124	320675	1056754	231.8
42	75	35	4275-35-1125	320724	1056803	231.8
42	75	35	4275-35-1126	320773	1056803	236
42	75	35	4275-35-1127	320779	1056853	233
42	75	35	4275-35-1128	320777	1056900	231.9
42	75	35	4275-35-1129	320834	1057103	247.4
42	75	35	4275-35-113	322324	1057953	
42	75	35	4275-35-1130	320782	1057104	249.5
42	75	35	4275-35-1131	320733	1057100	250.9
42	75	35	4275-35-1132	320170	1056850	253.9
42	75	35	4275-35-1133	322373	1057248	215.2
42	75	35	4275-35-1134	322367	1057198	194.9
42	75	35	4275-35-1135	322370	1057148	194.7
42	75	35	4275-35-1136	322417	1057148	194.7
42	75	35	4275-35-1137	322713	1056907	197
42	75	35	4275-35-1138	322662	1056913	194
42	75	35	4275-35-1139	322610	1056916	193
42	75	35	4275-35-114	322125	1057954	231.7
42	75	35	4275-35-1140	322609	1056961	192.9
42	75	35	4275-35-1141	322606	1057006	191.9
42	75	35	4275-35-1142	322570	1057149	190.6
42	75	35	4275-35-1143	322568	1057198	191.9
42	75	35	4275-35-1144	322570	1057256	192
42	75	35	4275-35-1145	322569	1057308	189.9
42	75	35	4275-35-1146	323318	1058153	254
42	75	35	4275-35-1147	323325	1058102	250.3
42	75	35	4275-35-1148	323332	1058052	258.9
42	75	35	4275-35-1149	320301	1056501	234.9
42	75	35	4275-35-115	322225	1057851	215

Table 2.3-1 Moore Ranch Drill Holes

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1150	320300	1056451	233.9
42	75	35	4275-35-1151	320291	1056402	229.9
42	75	35	4275-35-1152	320344	1056408	230.9
42	75	35	4275-35-1153	320391	1056406	231.9
42	75	35	4275-35-1154	320569	1056352	214.9
42	75	35	4275-35-1155	320616	1056350	212
42	75	35	4275-35-1156	320670	1056351	213
42	75	35	4275-35-1157	320719	1056349	211
42	75	35	4275-35-1158	322466	1057151	194.7
42	75	35	4275-35-1159	320723	1056439	210.8
42	75	35	4275-35-116	322027	1057851	
42	75	35	4275-35-1160	320727	1056496	236
42	75	35	4275-35-1161	321324	1056904	213.9
42	75	35	4275-35-1162	321321	1056952	220
42	75	35	4275-35-1163	321318	1056999	213.7
42	75	35	4275-35-1164	321368	1057000	218.9
42	75	35	4275-35-1165	321369	1057048	215.9
42	75	35	4275-35-1166	321423	1057051	217.8
42	75	35	4275-35-1167	321474	1057052	218.8
42	75	35	4275-35-1168	321574	1057103	216.8
42	75	35	4275-35-1169	320620	1056600	231
42	75	35	4275-35-117	321925	1057950	
42	75	35	4275-35-1170	322520	1058300	236.9
42	75	35	4275-35-1171	323272	1059054	275.9
42	75	35	4275-35-1172	323371	1059055	293.9
42	75	35	4275-35-1173	323420	1059000	292.8
42	75	35	4275-35-1174	323421	1058803	292.9
42	75	35	4275-35-1175	322717	1056857	188.7
42	75	35	4275-35-1176	322667	1056862	214.6
42	75	35	4275-35-1177	322617	1056865	215.7
42	75	35	4275-35-1178	322560	1056960	192.8
42	75	35	4275-35-1179	321574	1056554	192.7
42	75	35	4275-35-118	321826	1057851	
42	75	35	4275-35-1180	322558	1057050	192.4
42	75	35	4275-35-1181	322565	1057099	193.5
42	75	35	4275-35-1182	322520	1057099	213.7
42	75	35	4275-35-1183	322518	1057305	214.9
42	75	35	4275-35-1184	322521	1057149	211.9
42	75	35	4275-35-1185	322514	1057188	209.9
42	75	35	4275-35-1186	323520	1059300	275.3
42	75	35	4275-35-1187	323468	1059305	273.9
42	75	35	4275-35-1188	323419	1059301	277.9
42	75	35	4275-35-1189	320678	1057050	237.8
42	75	35	4275-35-119	321928	1057751	232.4

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1190	322478	1057196	188.8
42	75	35	4275-35-1191	320684	1057150	236.8
42	75	35	4275-35-1192	320734	1057150	237
42	75	35	4275-35-1193	320783	1057155	236
42	75	35	4275-35-1194	320833	1057151	256.9
42	75	35	4275-35-1195	320880	1057154	234.8
42	75	35	4275-35-1196	320884	1057104	257.8
42	75	35	4275-35-1197	320883	1057052	255
42	75	35	4275-35-1198	321576	1057151	212.9
42	75	35	4275-35-1199	322461	1057350	198
42	75	35	4275-35-12	320925	1057651	
42	75	35	4275-35-120	321725	1057952	
42	75	35	4275-35-1200	322469	1057302	192
42	75	35	4275-35-1201	322477	1057246	196.9
42	75	35	4275-35-1202	322510	1057051	192.9
42	75	35	4275-35-1203	322511	1057007	194.9
42	75	35	4275-35-1204	322511	1056962	197.8
42	75	35	4275-35-1205	322514	1056915	194.08
42	75	35	4275-35-1206	322570	1056914	196.6
42	75	35	4275-35-1207	321827	1058206	255.8
42	75	35	4275-35-1208	321878	1058204	255.9
42	75	35	4275-35-1209	321924	1058206	257.9
42	75	35	4275-35-121	321725	1057752	233.9
42	75	35	4275-35-1210	323319	1059103	
42	75	35	4275-35-1211	323364	1059105	293.8
42	75	35	4275-35-1212	323417	1059107	296.8
42	75	35	4275-35-1213	321422	1057097	217.5
42	75	35	4275-35-1214	323519	1059210	275.7
42	75	35	4275-35-1215	321522	1057102	211.8
42	75	35	4275-35-1216	321518	1057153	211.9
42	75	35	4275-35-1217	322422	1057296	193.4
42	75	35	4275-35-1218	322426	1057246	196.2
42	75	35	4275-35-1219	322434	1057198	212.5
42	75	35	4275-35-122	322127	1057752	217.8
42	75	35	4275-35-1220	321467	1057149	213
42	75	35	4275-35-1221	322419	1057353	191.6
42	75	35	4275-35-1222	323372	1059155	274.6
42	75	35	4275-35-1223	323370	1059200	275.9
42	75	35	4275-35-1224	323424	1059207	268.8
42	75	35	4275-35-1225	323473	1059209	272.8
42	75	35	4275-35-1226	323472	1059160	276
42	75	35	4275-35-1227	323465	1059110	293.8
42	75	35	4275-35-1228	323475	1059061	275.7
42	75	35	4275-35-1229	323516	1059113	276.8

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-123	322327	1057758	
42	75	35	4275-35-1230	321473	1057100	212.9
42	75	35	4275-35-1231	323470	1059250	277
42	75	35	4275-35-1232	323371	1059257	270.9
42	75	35	4275-35-1233	321515	1057201	210
42	75	35	4275-35-1234	321572	1057203	214
42	75	35	4275-35-1235	321621	1057199	213.9
42	75	35	4275-35-1236	320120	1056350	234.9
42	75	35	4275-35-1237	320120	1056250	235
42	75	35	4275-35-1238	320120	1056150	234.9
42	75	35	4275-35-1239	320722	1056397	231.7
42	75	35	4275-35-124	321626	1057651	237.2
42	75	35	4275-35-1240	320476	1056899	233.9
42	75	35	4275-35-1241	320480	1056947	231.8
42	75	35	4275-35-1242	320531	1056942	237.7
42	75	35	4275-35-1243	320580	1056942	236.9
42	75	35	4275-35-1244	323566	1059255	295.9
42	75	35	4275-35-1245	323568	1059305	294.9
42	75	35	4275-35-1246	323568	1059358	290.5
42	75	35	4275-35-1247	323520	1059355	290.9
42	75	35	4275-35-1248	323470	1059358	274.8
42	75	35	4275-35-1249	320770	1056446	235.9
42	75	35	4275-35-125	321824	1057652	
42	75	35	4275-35-1250	320768	1056396	215
42	75	35	4275-35-1251	320772	1056350	215.9
42	75	35	4275-35-1252	320774	1056305	236
42	75	35	4275-35-1253	320725	1056298	214.8
42	75	35	4275-35-1254	320770	1056495	231.9
42	75	35	4275-35-1255	320675	1056292	
42	75	35	4275-35-1256	320683	1057099	233
42	75	35	4275-35-1257	320938	1057195	199.9
42	75	35	4275-35-1258C	322572	1059137	276.9
42	75	35	4275-35-1259C	322540	1056435	276.9
42	75	35	4275-35-126	321726	1057452	
42	75	35	4275-35-1260C	322581	1059557	194.9
42	75	35	4275-35-1261	322524	1058281	227.8
42	75	35	4275-35-1262	322570	1057347	196
42	75	35	4275-35-1263	322566	1057548	219.9
42	75	35	4275-35-1264	323470	1059000	222.8
42	75	35	4275-35-1265	323520	1059000	292.9
42	75	35	4275-35-1266	323570	1059000	295.9
42	75	35	4275-35-1267	323570	1059050	294
42	75	35	4275-35-1268	323570	1059100	294
42	75	35	4275-35-1269	323270	1058200	258.9

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-127	322924	1058353	243.8
42	75	35	4275-35-1270	323270	1058000	258.9
42	75	35	4275-35-1271	323270	1057950	259.9
42	75	35	4275-35-1272	323270	1057900	249.9
42	75	35	4275-35-1273	322320	1057300	195.6
42	75	35	4275-35-1274	322270	1057250	195.8
42	75	35	4275-35-1275	322320	1057200	195.8
42	75	35	4275-35-1276	322470	1057050	199
42	75	35	4275-35-1277	322470	1057000	199
42	75	35	4275-35-1278	322470	1056950	199
42	75	35	4275-35-1279	321370	1056550	214
42	75	35	4275-35-128	323026	1058351	
42	75	35	4275-35-1280	321470	1056650	215.9
42	75	35	4275-35-1281	320370	1056700	234.8
42	75	35	4275-35-1282	320320	1056700	234
42	75	35	4275-35-1283	322970	1056900	215
42	75	35	4275-35-1284	323170	1056900	217
42	75	35	4275-35-1285	322170	1057100	218.9
42	75	35	4275-35-1286	322170	1057300	218.9
42	75	35	4275-35-1287	323570	1057700	277.9
42	75	35	4275-35-1288	323570	1058100	277.9
42	75	35	4275-35-1289	323370	1058150	259
42	75	35	4275-35-129	322922	1058151	274.7
42	75	35	4275-35-1290	323370	1058100	258.9
42	75	35	4275-35-1291	323370	1058050	258.9
42	75	35	4275-35-1292	323820	1058750	295.9
42	75	35	4275-35-1293	323820	1058950	294
42	75	35	4275-35-1294	323820	1059150	282.9
42	75	35	4275-35-1295	322568	1057294	239
42	75	35	4275-35-1296	320820	1056450	214.9
42	75	35	4275-35-1297	320820	1056400	218
42	75	35	4275-35-1298	320820	1056350	216.9
42	75	35	4275-35-1299	320820	1056300	218
42	75	35	4275-35-13	320184	1057233	
42	75	35	4275-35-130	322820	1058254	287.1
42	75	35	4275-35-1300	320820	1056250	216
42	75	35	4275-35-1301	320820	1057200	238
42	75	35	4275-35-1302	320770	1057200	237
42	75	35	4275-35-1303	320720	1057200	
42	75	35	4275-35-1304	320670	1057200	237.9
42	75	35	4275-35-1305	320620	1057200	238
42	75	35	4275-35-1306	320920	1057200	238
42	75	35	4275-35-1307	320970	1057200	237.8
42	75	35	4275-35-1308	320770	1056250	214.9

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1309	320720	1056250	214
42	75	35	4275-35-131	322723	1058151	274.7
42	75	35	4275-35-1310	320670	1056250	214
42	75	35	4275-35-1311	320620	1056250	216.9
42	75	35	4275-35-1312	320620	1056300	217
42	75	35	4275-35-1313	320620	1057150	237.9
42	75	35	4275-35-1314	320620	1057100	236.6
42	75	35	4275-35-1315	320622	1056999	236.8
42	75	35	4275-35-1316	320680	1056999	235.9
42	75	35	4275-35-1317	320970	1057150	239
42	75	35	4275-35-1318	320970	1057100	238.6
42	75	35	4275-35-1319	320970	1057050	238
42	75	35	4275-35-132	321624	1057755	
42	75	35	4275-35-1320	320927	1057103	238
42	75	35	4275-35-1321	320720	1056050	212.9
42	75	35	4275-35-1322	320720	1055850	215
42	75	35	4275-35-1323	320420	1056350	235
42	75	35	4275-35-1324	320370	1056350	234
42	75	35	4275-35-1325	320320	1056350	236
42	75	35	4275-35-1326	320270	1056350	238
42	75	35	4275-35-1327	320220	1056400	235.8
42	75	35	4275-35-1328	320220	1056450	236
42	75	35	4275-35-1329	321120	1056850	237.8
42	75	35	4275-35-133	321826	1057754	
42	75	35	4275-35-1330	321120	1056650	238.9
42	75	35	4275-35-1331	321120	1056450	235.9
42	75	35	4275-35-1332	321120	1056250	236.9
42	75	35	4275-35-1333	320620	1056200	217.9
42	75	35	4275-35-1334	320670	1056200	215.9
42	75	35	4275-35-1335	320720	1056200	215.9
42	75	35	4275-35-1336	321470	1056550	215.9
42	75	35	4275-35-1337	321470	1056600	216
42	75	35	4275-35-1338	321420	1056600	216
42	75	35	4275-35-1339	321420	1056700	216
42	75	35	4275-35-134	321726	1057551	
42	75	35	4275-35-1340	321324	1056449	235.9
42	75	35	4275-35-1341	321820	1056650	215.9
42	75	35	4275-35-1342	321770	1056650	246
42	75	35	4275-35-1343	321870	1056650	215
42	75	35	4275-35-1344	322570	1056700	216
42	75	35	4275-35-1345	322570	1056500	215.8
42	75	35	4275-35-1346	320770	1056200	214
42	75	35	4275-35-1347	320720	1056150	216
42	75	35	4275-35-1348	320670	1056150	215.9

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1349	320620	1056150	215.9
42	75	35	4275-35-135	321924	1057653	
42	75	35	4275-35-1350	320570	1056150	215.9
42	75	35	4275-35-1351	320570	1056250	216
42	75	35	4275-35-1352	320570	1056200	215
42	75	35	4275-35-1353	321525	1056500	216
42	75	35	4275-35-1354	321602	1056475	214
42	75	35	4275-35-1355	321623	1056498	214
42	75	35	4275-35-1356	323320	1058200	255.9
42	75	35	4275-35-1357	323320	1058250	253.9
42	75	35	4275-35-1358	320720	1056100	218.8
42	75	35	4275-35-1359	320670	1056100	218.9
42	75	35	4275-35-136	322027	1057954	
42	75	35	4275-35-1360	320620	1056100	149.9
42	75	35	4275-35-1361	320770	1056100	218
42	75	35	4275-35-1362	320770	1056150	218
42	75	35	4275-35-1363	322570	1056650	215
42	75	35	4275-35-1364	322570	1056750	213.9
42	75	35	4275-35-1365	322620	1056700	215.9
42	75	35	4275-35-1366	322520	1056700	215
42	75	35	4275-35-1367	320270	1056650	237.8
42	75	35	4275-35-1368	322370	1056700	218.9
42	75	35	4275-35-1369	322570	1056900	234
42	75	35	4275-35-137	322423	1057951	
42	75	35	4275-35-1370	320320	1056300	247.6
42	75	35	4275-35-1371	320370	1056300	237.9
42	75	35	4275-35-1372	320420	1056300	238.9
42	75	35	4275-35-1373	320820	1056150	216
42	75	35	4275-35-1374	320820	1056200	214.8
42	75	35	4275-35-1375	321523	1056451	214.9
42	75	35	4275-35-1376	321520	1056450	215.9
42	75	35	4275-35-1377	321926	1056447	216
42	75	35	4275-35-1378	321470	1057450	218
42	75	35	4275-35-1379	321520	1057400	213.9
42	75	35	4275-35-138	322626	1058254	
42	75	35	4275-35-1380	321520	1057500	217.9
42	75	35	4275-35-1381	321470	1057500	218.8
42	75	35	4275-35-1382	321470	1057400	216.8
42	75	35	4275-35-1383	321570	1057400	216.9
42	75	35	4275-35-1384	321320	1057450	218.9
42	75	35	4275-35-1385	323820	1059350	295.9
42	75	35	4275-35-1386	323820	1059750	295.9
42	75	35	4275-35-1387	323620	1059450	294
42	75	35	4275-35-1388	323620	1059550	295

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1389	323620	1059750	295.7
42	75	35	4275-35-139	322624	1058154	
42	75	35	4275-35-1390	322620	1056750	233.8
42	75	35	4275-35-1391	322670	1056750	217
42	75	35	4275-35-1392	322520	1056750	216.9
42	75	35	4275-35-1393	322520	1056650	215.9
42	75	35	4275-35-1394	322620	1056650	215.9
42	75	35	4275-35-1395	322670	1056650	215
42	75	35	4275-35-1396	322670	1056700	211.9
42	75	35	4275-35-1397	321579	1057503	215
42	75	35	4275-35-1398	321420	1057150	217.9
42	75	35	4275-35-1399	321120	1056950	233.8
42	75	35	4275-35-14	321725	1058852	
42	75	35	4275-35-140	321625	1057851	
42	75	35	4275-35-1400	321120	1057150	238.9
42	75	35	4275-35-1401	321120	1057350	219
42	75	35	4275-35-1402	321120	1057550	218.9
42	75	35	4275-35-1403	320920	1055850	215.8
42	75	35	4275-35-1404	321120	1055850	234.9
42	75	35	4275-35-1405	320520	1055850	217.9
42	75	35	4275-35-1406	320320	1055850	218.8
42	75	35	4275-35-1407	320120	1055850	215.9
42	75	35	4275-35-1408	320320	1056050	217.9
42	75	35	4275-35-1409	322170	1056700	216
42	75	35	4275-35-141	322525	1058153	
42	75	35	4275-35-1410	322170	1056900	215
42	75	35	4275-35-1411	322170	1057050	216
42	75	35	4275-35-1412	321120	1056050	214
42	75	35	4275-35-1413	321521	1056046	215.9
42	75	35	4275-35-1414	321924	1056054	216.9
42	75	35	4275-35-1415	320270	1057100	237.9
42	75	35	4275-35-1416	320270	1057050	237.9
42	75	35	4275-35-1417	320273	1056995	236.5
42	75	35	4275-35-1418	320370	1057100	236
42	75	35	4275-35-1419	320370	1057050	236
42	75	35	4275-35-142	323125	1058355	
42	75	35	4275-35-1420	320375	1056996	235.9
42	75	35	4275-35-1421	320320	1057100	236.9
42	75	35	4275-35-1422	320323	1056997	237
42	75	35	4275-35-1423	320570	1057200	238.9
42	75	35	4275-35-1424	320570	1057150	239
42	75	35	4275-35-1425	320570	1057250	235.9
42	75	35	4275-35-1426	320620	1057250	238.8
42	75	35	4275-35-1427	320670	1057250	238.9

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1428	320420	1056250	236.8
42	75	35	4275-35-1429	320470	1056250	236.9
42	75	35	4275-35-143	323026	1058453	
42	75	35	4275-35-1430	320370	1056250	236.3
42	75	35	4275-35-1431	320470	1056350	236.9
42	75	35	4275-35-1432	320470	1056300	237.8
42	75	35	4275-35-1433	320920	1055650	218
42	75	35	4275-35-1434	322570	1056600	216.9
42	75	35	4275-35-1435	322520	1056600	216.9
42	75	35	4275-35-1436	322470	1056600	214.9
42	75	35	4275-35-1437	322470	1056700	216
42	75	35	4275-35-1438	322470	1056650	215
42	75	35	4275-35-1439	322670	1056800	213.8
42	75	35	4275-35-144	323024	1058253	
42	75	35	4275-35-1440	322619	1056808	212.9
42	75	35	4275-35-1441	322569	1056810	213.8
42	75	35	4275-35-1442	321723	1056857	216
42	75	35	4275-35-1443	322370	1056900	216.9
42	75	35	4275-35-1444	322820	1056900	212
42	75	35	4275-35-1445	320920	1056250	235.9
42	75	35	4275-35-1446	320920	1056600	232.6
42	75	35	4275-35-1447	320720	1056600	236.9
42	75	35	4275-35-1448	320220	1056950	233.4
42	75	35	4275-35-1449	320220	1057000	236.9
42	75	35	4275-35-145	322824	1058353	
42	75	35	4275-35-1450	320220	1057050	238
42	75	35	4275-35-1451	320320	1056200	236.9
42	75	35	4275-35-1452	320370	1056200	218.9
42	75	35	4275-35-1453	320420	1056200	237
42	75	35	4275-35-1454	320470	1056200	236.8
42	75	35	4275-35-1455	320320	1056250	238.9
42	75	35	4275-35-1456	320520	1057000	235.9
42	75	35	4275-35-1457	320570	1057000	237
42	75	35	4275-35-1458	321570	1057350	217
42	75	35	4275-35-1459	321470	1057350	217
42	75	35	4275-35-146	322724	1058102	
42	75	35	4275-35-1460	322170	1057200	215
42	75	35	4275-35-1461	322170	1056500	215
42	75	35	4275-35-1462	321520	1056350	215.6
42	75	35	4275-35-1463	321320	1056350	214.9
42	75	35	4275-35-1464	320270	1056950	236.7
42	75	35	4275-35-1465	320470	1057000	236
42	75	35	4275-35-1466	320520	1057200	237
42	75	35	4275-35-1467	322420	1056700	213.7

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1468	322420	1056650	216
42	75	35	4275-35-1469	322420	1056600	216
42	75	35	4275-35-147	322823	1058102	
42	75	35	4275-35-1470	322420	1056550	214.9
42	75	35	4275-35-1471	322470	1056550	213.7
42	75	35	4275-35-1472	322520	1056550	215.8
42	75	35	4275-35-1473	322022	1056150	216.8
42	75	35	4275-35-1474	321920	1056150	215.7
42	75	35	4275-35-1475	321823	1056150	216.2
42	75	35	4275-35-1476	321620	1056150	215.7
42	75	35	4275-35-1477	321520	1056150	215.4
42	75	35	4275-35-1478	321420	1056150	216
42	75	35	4275-35-1479	321420	1056050	216
42	75	35	4275-35-148	322924	1058101	
42	75	35	4275-35-1480	321420	1055950	216
42	75	35	4275-35-1481	321520	1055950	210
42	75	35	4275-35-1482	321620	1055950	215
42	75	35	4275-35-1483	321820	1055950	216.9664
42	75	35	4275-35-1484	321920	1055950	213.8
42	75	35	4275-35-1485	322023	1055950	218.9
42	75	35	4275-35-1486	322020	1056045	217
42	75	35	4275-35-1487	321820	1056050	215.9
42	75	35	4275-35-1488	321724	1056051	215
42	75	35	4275-35-1489	321620	1056050	214.9
42	75	35	4275-35-149	322724	1058203	
42	75	35	4275-35-1490	320620	1057300	236.9
42	75	35	4275-35-1491	320570	1057300	236.8
42	75	35	4275-35-1492	320520	1057300	236.8
42	75	35	4275-35-1493	321320	1056250	234.9
42	75	35	4275-35-1494	320320	1056150	216
42	75	35	4275-35-1495	320370	1056150	215.9
42	75	35	4275-35-1496	320420	1056150	215
42	75	35	4275-35-1497	320720	1056550	235.9
42	75	35	4275-35-1498	320770	1056550	234.9
42	75	35	4275-35-1499	320770	1056600	235
42	75	35	4275-35-15	322124	1058054	
42	75	35	4275-35-150	322923	1058301	
42	75	35	4275-35-1500	320770	1056650	236.9
42	75	35	4275-35-1501	321420	1055900	216.9
42	75	35	4275-35-1502	321620	1055900	215
42	75	35	4275-35-1503	321520	1055900	217
42	75	35	4275-35-1504	322025	1056199	216.9
42	75	35	4275-35-1505	321820	1056250	196
42	75	35	4275-35-1506	321920	1056200	216.9

Table 2.3-1 Moore Ranch Drill Holes

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1507	322170	1057150	211.9
42	75	35	4275-35-1508	322170	1057250	212.9
42	75	35	4275-35-1509	322120	1057200	216
42	75	35	4275-35-151	322924	1058201	
42	75	35	4275-35-1510	322220	1057200	214
42	75	35	4275-35-1511	322220	1057250	214
42	75	35	4275-35-1512	322120	1057143	215
42	75	35	4275-35-1513	322220	1057150	217
42	75	35	4275-35-1514	320820	1056550	235
42	75	35	4275-35-1515	320820	1056600	235
42	75	35	4275-35-1516	320470	1056450	236.8
42	75	35	4275-35-1517	320120	1056050	215.9
42	75	35	4275-35-1518	320470	1056150	216.9
42	75	35	4275-35-1519	322720	1056750	213.9
42	75	35	4275-35-152	322823	1058202	
42	75	35	4275-35-1520	320620	1057350	236.9
42	75	35	4275-35-1521	320570	1057350	237.9
42	75	35	4275-35-1522	320670	1057350	236.9
42	75	35	4275-35-1523	320670	1057300	237
42	75	35	4275-35-1524	322174	1057099	198
42	75	35	4275-35-1525	322124	1057093	197
42	75	35	4275-35-1526	320520	1057300	197.9
42	75	35	4275-35-1527	322223	1057106	196.9
42	75	35	4275-35-1528	322170	1057300	214.9
42	75	35	4275-35-1529	322220	1057300	216
42	75	35	4275-35-153	323225	1058505	
42	75	35	4275-35-1530	322120	1057300	215
42	75	35	4275-35-1531	322270	1057200	196
42	75	35	4275-35-1532	322270	1057150	195
42	75	35	4275-35-1533	322516	1056858	217.7
42	75	35	4275-35-1534	322524	1056809	219.9
42	75	35	4275-35-1535	320720	1057350	238.9
42	75	35	4275-35-1536	320720	1057300	238.9
42	75	35	4275-35-1537	320720	1057250	236.9
42	75	35	4275-35-1538	323920	1060450	
42	75	35	4275-35-1539	324170	1059150	
42	75	35	4275-35-154	323321	1058507	
42	75	35	4275-35-1540	324170	1058750	
42	75	35	4275-35-1541	324170	1058350	
42	75	35	4275-35-1542	324170	1057950	
42	75	35	4275-35-1543	324170	1057550	
42	75	35	4275-35-1544	324570	1057950	
42	75	35	4275-35-1545	324570	1058350	
42	75	35	4275-35-1546	324570	1058750	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1547	324570	1059151	
42	75	35	4275-35-1548	324970	1059150	
42	75	35	4275-35-1549	324970	1058750	
42	75	35	4275-35-155	323322	1058606	
42	75	35	4275-35-1550	322895	1056900	
42	75	35	4275-35-1551	322820	1056800	
42	75	35	4275-35-1552	322820	1056700	
42	75	35	4275-35-1553	322170	1056304	
42	75	35	4275-35-1554	321420	1056250	
42	75	35	4275-35-1555	321420	1056350	
42	75	35	4275-35-1556	321420	1056450	
42	75	35	4275-35-1557	321105	1056747	
42	75	35	4275-35-1558	321020	1056750	
42	75	35	4275-35-1559	320920	1056750	
42	75	35	4275-35-156	322327	1057803	
42	75	35	4275-35-1560	321020	1056850	
42	75	35	4275-35-1561	321220	1056850	
42	75	35	4275-35-1562	321220	1056950	
42	75	35	4275-35-1563	321220	1057050	
42	75	35	4275-35-1564	321220	1057150	
42	75	35	4275-35-1565	321220	1057250	
42	75	35	4275-35-1566	321220	1057350	
42	75	35	4275-35-1567	321220	1057450	
42	75	35	4275-35-1568	321220	1057550	
42	75	35	4275-35-1569	321329	1057550	
42	75	35	4275-35-157	322275	1057853	
42	75	35	4275-35-1570	320820	1057550	
42	75	35	4275-35-1571	320820	1057650	
42	75	35	4275-35-1572	321023	1057366	
42	75	35	4275-35-1573	320620	1057650	
42	75	35	4275-35-1574	320520	1057750	
42	75	35	4275-35-1575	320920	1057750	
42	75	35	4275-35-1576	321020	1057750	
42	75	35	4275-35-1577	320420	1057550	
42	75	35	4275-35-1578	320420	1057350	
42	75	35	4275-35-1579	320420	1056050	
42	75	35	4275-35-158	322176	1057852	
42	75	35	4275-35-1580	320520	1055950	
42	75	35	4275-35-1581	320620	1055850	
42	75	35	4275-35-1582	320420	1055850	
42	75	35	4275-35-1583	320720	1055650	
42	75	35	4275-35-1584	320770	1057350	
42	75	35	4275-35-1585	320770	1057300	
42	75	35	4275-35-1586	320770	1057250	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1587	321720	1056150	
42	75	35	4275-35-1588	321870	1056150	
42	75	35	4275-35-1589	321920	1056300	
42	75	35	4275-35-159	322027	1057751	
42	75	35	4275-35-1590	321720	1055950	
42	75	35	4275-35-1591	321575	1056041	
42	75	35	4275-35-1592	321320	1057500	
42	75	35	4275-35-1593	323433	1059153	
42	75	35	4275-35-1594	321370	1056450	
42	75	35	4275-35-1595	321326	1056344	
42	75	35	4275-35-1596	321320	1056150	
42	75	35	4275-35-1597	321320	1055950	
42	75	35	4275-35-1598	321501	1055800	
42	75	35	4275-35-1599	321020	1056650	
42	75	35	4275-35-16	322124	1058454	
42	75	35	4275-35-160	322075	1057852	
42	75	35	4275-35-1600	321276	1056991	
42	75	35	4275-35-1601	321421	1057216	
42	75	35	4275-35-1602	320520	1057100	
42	75	35	4275-35-1603	320420	1057150	
42	75	35	4275-35-1604	324570	1058150	
42	75	35	4275-35-1605	324770	1058750	
42	75	35	4275-35-1606	324770	1058950	
42	75	35	4275-35-1607	324970	1058950	
42	75	35	4275-35-1608	320370	1056100	
42	75	35	4275-35-1609	320420	1055950	
42	75	35	4275-35-161	322524	1058051	
42	75	35	4275-35-1610	320620	1055650	
42	75	35	4275-35-1611	321620	1056100	
42	75	35	4275-35-1612	321720	1056100	
42	75	35	4275-35-1613	321820	1056100	
42	75	35	4275-35-1614	321820	1056200	
42	75	35	4275-35-1615	321620	1056000	
42	75	35	4275-35-1616	321970	1056100	
42	75	35	4275-35-1617	321926	1056242	
42	75	35	4275-35-1618	322035	1056297	
42	75	35	4275-35-1619	322570	1055700	
42	75	35	4275-35-162	322524	1057951	
42	75	35	4275-35-1620	322540	1056099	
42	75	35	4275-35-1621	322170	1055700	
42	75	35	4275-35-1622	321770	1055700	
42	75	35	4275-35-1623	321320	1055697	
42	75	35	4275-35-1624	321920	1056350	
42	75	35	4275-35-1625	322175	1056793	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1626	322275	1056700	
42	75	35	4275-35-1627	321570	1056000	
42	75	35	4275-35-1628	321570	1056100	
42	75	35	4275-35-1629	321220	1056750	
42	75	35	4275-35-163	322873	1058200	
42	75	35	4275-35-1630	321370	1057500	
42	75	35	4275-35-1631	321370	1057550	
42	75	35	4275-35-1632	322915	1056801	
42	75	35	4275-35-1633	321220	1057650	
42	75	35	4275-35-1634	324020	1056051	
42	75	35	4275-35-1635	321370	1056150	
42	75	35	4275-35-1636	321730	1056195	
42	75	35	4275-35-1637	321920	1056100	
42	75	35	4275-35-1638	321676	1056049	
42	75	35	4275-35-1639	321504	1055848	
42	75	35	4275-35-164	323420	1058955	
42	75	35	4275-35-1640	324670	1059053	
42	75	35	4275-35-1641	321370	1056350	
42	75	35	4275-35-1642	321370	1056250	
42	75	35	4275-35-1643	321120	1056800	
42	75	35	4275-35-1644	321000	1056698	
42	75	35	4275-35-1645	320820	1056050	
42	75	35	4275-35-1646	320920	1056350	
42	75	35	4275-35-1647	320920	1055950	
42	75	35	4275-35-1648	321120	1055950	
42	75	35	4275-35-1649	320920	1055750	
42	75	35	4275-35-165	323221	1058756	
42	75	35	4275-35-1650	321126	1055649	
42	75	35	4275-35-1651	321383	1056203	
42	75	35	4275-35-1652	321379	1056298	
42	75	35	4275-35-1653	321379	1056392	
42	75	35	4275-35-1654C	320576	1056600	
42	75	35	4275-35-1655C	320572	1056704	
42	75	35	4275-35-1656C	320570	1056799	
42	75	35	4275-35-1657	320933	1056301	
42	75	35	4275-35-1658	320933	1055997	
42	75	35	4275-35-1659	320870	1056049	
42	75	35	4275-35-166	323421	1058757	
42	75	35	4275-35-1660	320940	1055691	
42	75	35	4275-35-1661	321425	1056199	
42	75	35	4275-35-1662	321425	1056295	
42	75	35	4275-35-1663	321422	1056392	
42	75	35	4275-35-1664	322332	1055698	
42	75	35	4275-35-1665C	320771	1056324	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1666C	320646	1056419	
42	75	35	4275-35-1667C	320172	1056780	
42	75	35	4275-35-1668C	320710	1057078	
42	75	35	4275-35-1669C	320777	1056974	
42	75	35	4275-35-167	323420	1058657	
42	75	35	4275-35-1670C	320273	1056826	
42	75	35	4275-35-1671C	321502	1056774	
42	75	35	4275-35-1672C	321577	1056803	
42	75	35	4275-35-1673C	322790	1057107	
42	75	35	4275-35-1674	322242	1055695	
42	75	35	4275-35-1675C	322683	1057228	
42	75	35	4275-35-1676C	323397	1059208	
42	75	35	4275-35-1677	322328	1058345	
42	75	35	4275-35-1678C	322496	1056642	
42	75	35	4275-35-1679C	322121	1057170	
42	75	35	4275-35-168	323419	1058556	
42	75	35	4275-35-1680	321512	1055696	
42	75	35	4275-35-1681	321909	1055700	
42	75	35	4275-35-1682	321712	1055503	
42	75	35	4275-35-1683	322025	1056240	
42	75	35	4275-35-1684	322171	1056400	
42	75	35	4275-35-1685	322225	1056700	
42	75	35	4275-35-1686	320775	1056046	
42	75	35	4275-35-1687	321378	1056106	
42	75	35	4275-35-1688	321427	1056098	
42	75	35	4275-35-1689	321913	1055497	
42	75	35	4275-35-169	323420	1058458	
42	75	35	4275-35-1690	322325	1055500	
42	75	35	4275-35-1691	321717	1055603	
42	75	35	4275-35-1692	321539	1055504	
42	75	35	4275-35-1693	321335	1055504	
42	75	35	4275-35-1694	321636	1055801	
42	75	35	4275-35-1695	321813	1055797	
42	75	35	4275-35-1696	322168	1056352	
42	75	35	4275-35-1697	321473	1056452	
42	75	35	4275-35-1698	321474	1056499	
42	75	35	4275-35-1699	321426	1056495	
42	75	35	4275-35-17	322123	1058845	
42	75	35	4275-35-170	323324	1058357	
42	75	35	4275-35-1700	321382	1056497	
42	75	35	4275-35-1701	321473	1056044	
42	75	35	4275-35-1702	321475	1056093	
42	75	35	4275-35-1703C	323375	1058877	
42	75	35	4275-35-1704	321026	1057099	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1705	320929	1056510	
42	75	35	4275-35-1706	321323	1056391	
42	75	35	4275-35-1707	321315	1056489	
42	75	35	4275-35-1708	321323	1056549	218.9
42	75	35	4275-35-1709	321380	1056549	213
42	75	35	4275-35-171	323226	1058355	
42	75	35	4275-35-1710	321274	1057547	215.9
42	75	35	4275-35-1711	321221	1057851	217.8
42	75	35	4275-35-1712	324521	1055475	215.9
42	75	35	4275-35-1713	323164	1056686	
42	75	35	4275-35-1714	322931	1056701	
42	75	35	4275-35-1715	322770	1056644	
42	75	35	4275-35-1716	322271	1056795	
42	75	35	4275-35-1717	322282	1056506	
42	75	35	4275-35-1718	321123	1056549	
42	75	35	4275-35-1719	320727	1057499	
42	75	35	4275-35-172	323022	1058150	
42	75	35	4275-35-1720	320824	1057443	
42	75	35	4275-35-1721	320928	1057592	
42	75	35	4275-35-1722	321124	1057949	
42	75	35	4275-35-1723	323712	1059455	
42	75	35	4275-35-1724	324008	1059757	
42	75	35	4275-35-1725	324111	1060090	
42	75	35	4275-35-1726	321273	1057596	
42	75	35	4275-35-1727	321222	1057694	
42	75	35	4275-35-1728	321378	1056593	
42	75	35	4275-35-1729	321329	1056583	
42	75	35	4275-35-173	322922	1058052	
42	75	35	4275-35-1730	322224	1056501	
42	75	35	4275-35-1731	322079	1056590	
42	75	35	4275-35-1732	321275	1056601	
42	75	35	4275-35-1733	321275	1056653	
42	75	35	4275-35-1734	321817	1056697	
42	75	35	4275-35-1735	321978	1056600	
42	75	35	4275-35-1736	321159	1057386	
42	75	35	4275-35-1737	321142	1055498	
42	75	35	4275-35-1738	320307	1055644	
42	75	35	4275-35-1739	321425	1056547	
42	75	35	4275-35-174	322825	1058052	
42	75	35	4275-35-1740	322404	1056800	
42	75	35	4275-35-1741	321720	1055452	
42	75	35	4275-35-1742	321690	1055756	
42	75	35	4275-35-1743	321789	1055743	
42	75	35	4275-35-1744	322272	1056035	

Table 2.6-1 Moore Ranch Drill Holes

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1745	321222	1056797	
42	75	35	4275-35-1746	321325	1056748	
42	75	35	4275-35-1747	321066	1056746	
42	75	35	4275-35-1748	320918	1056695	
42	75	35	4275-35-1749	322030	1056595	
42	75	35	4275-35-175	322423	1058152	
42	75	35	4275-35-1750	321983	1056551	
42	75	35	4275-35-1751	321723	1056502	
42	75	35	4275-35-1752	322458	1056803	
42	75	35	4275-35-1753	320345	1056107	
42	75	35	4275-35-1754	320127	1055951	
42	75	35	4275-35-1755	320126	1056558	
42	75	35	4275-35-1756	320229	1056359	
42	75	35	4275-35-1757	321070	1056701	
42	75	35	4275-35-1758	322036	1056540	
42	75	35	4275-35-1759	321932	1056559	
42	75	35	4275-35-176	322424	1057852	
42	75	35	4275-35-1760	321934	1056604	
42	75	35	4275-35-1761	322404	1056848	
42	75	35	4275-35-1762	322405	1056750	
42	75	35	4275-35-1763	322070	1056403	
42	75	35	4275-35-1764	322080	1056490	
42	75	35	4275-35-1765	321370	1056650	
42	75	35	4275-35-1766	320372	1056947	
42	75	35	4275-35-1767	320122	1057002	
42	75	35	4275-35-1768	320121	1057051	
42	75	35	4275-35-1769	320320	1057200	
42	75	35	4275-35-177	322219	1057750	
42	75	35	4275-35-1770	320478	1057137	
42	75	35	4275-35-1771	320869	1057199	
42	75	35	4275-35-1772	320869	1057342	
42	75	35	4275-35-1773	321027	1057409	
42	75	35	4275-35-1774	322083	1056543	
42	75	35	4275-35-1775	321974	1056652	
42	75	35	4275-35-1776	322080	1056550	
42	75	35	4275-35-1777	322021	1056659	
42	75	35	4275-35-1778	321925	1056653	
42	75	35	4275-35-1779	321988	1056491	
42	75	35	4275-35-178	322226	1058054	
42	75	35	4275-35-1780	322040	1056500	
42	75	35	4275-35-1781	322136	1056538	
42	75	35	4275-35-1782	321930	1056705	
42	75	35	4275-35-1783	322116	1056488	
42	75	35	4275-35-1784	321927	1056763	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-1785	321982	1056703	
42	75	35	4275-35-1786	322119	1056431	
42	75	35	4275-35-1787	321981	1056758	
42	75	35	4275-35-1788	322135	1056589	
42	75	35	4275-35-1789	321891	1056610	
42	75	35	4275-35-179	321811	1057553	
42	75	35	4275-35-1790	321942	1056512	
42	75	35	4275-35-1791	320167	1056999	
42	75	35	4275-35-1792	320072	1057001	
42	75	35	4275-35-1793	320170	1057190	
42	75	35	4275-35-1794	320272	1057193	
42	75	35	4275-35-1795	320220	1057150	
42	75	35	4275-35-1796	320070	1057050	
42	75	35	4275-35-1797	320170	1057050	
42	75	35	4275-35-1798	320170	1056950	
42	75	35	4275-35-1799	320070	1056950	
42	75	35	4275-35-18	322525	1058458	
42	75	35	4275-35-180	321627	1057551	
42	75	35	4275-35-1800	322070	1056650	
42	75	35	4275-35-1801	321970	1056450	
42	75	35	4275-35-1802	321820	1056550	
42	75	35	4275-35-1803	320930	1057650	
42	75	35	4275-35-1804	320070	1057050	
42	75	35	4275-35-181	321526	1057652	
42	75	35	4275-35-1811C	322236.5	1057812	
42	75	35	4275-35-1812C	323077.6	1058306	279
42	75	35	4275-35-1813C	320650	1057250	229
42	75	35	4275-35-1813C	320650	1057250	229
42	75	35	4275-35-1814C	320575	1056555	206
42	75	35	4275-35-1814C	320575	1056555	206
42	75	35	4275-35-1816	320600	1056530	
42	75	35	4275-35-1817	320575	1056750	
42	75	35	4275-35-182	320330	1057346	
42	75	35	4275-35-183	320425	1057450	
42	75	35	4275-35-184	320725	1057551	
42	75	35	4275-35-185	320926	1057551	
42	75	35	4275-35-186	321023	1057651	
42	75	35	4275-35-187	321030	1057855	
42	75	35	4275-35-188	321325	1057752	
42	75	35	4275-35-189	322623	1058052	
42	75	35	4275-35-19	322524	1057653	
42	75	35	4275-35-190C	322899	1058176	289.4
42	75	35	4275-35-191C	322897	1058126	274.9
42	75	35	4275-35-192C	322901	1058227	263.6

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-193C	322902	1058277	288.9
42	75	35	4275-35-194C	322905	1058326	313.6
42	75	35	4275-35-195C	322904	1058377	316
42	75	35	4275-35-196C	322896	1058076	274.9
42	75	35	4275-35-197C	322894	1058026	273.8
42	75	35	4275-35-198	320729	1056850	
42	75	35	4275-35-199	320929	1056954	
42	75	35	4275-35-2	325296	1057941	
42	75	35	4275-35-20	322125	1057653	
42	75	35	4275-35-200	320828	1057051	
42	75	35	4275-35-201	320625	1057751	
42	75	35	4275-35-202	320726	1057751	
42	75	35	4275-35-203	320825	1057750	
42	75	35	4275-35-204	320724	1057952	
42	75	35	4275-35-205	321224	1057751	
42	75	35	4275-35-206	321423	1057751	
42	75	35	4275-35-207	321327	1057051	
42	75	35	4275-35-208	321526	1057249	
42	75	35	4275-35-209	321725	1057354	
42	75	35	4275-35-21	320927	1057270	
42	75	35	4275-35-210	321526	1057450	
42	75	35	4275-35-211	321821	1057455	
42	75	35	4275-35-212	321922	1057551	
42	75	35	4275-35-213	322022	1057553	
42	75	35	4275-35-214	322026	1057655	
42	75	35	4275-35-215	322225	1057651	
42	75	35	4275-35-216	322329	1057651	
42	75	35	4275-35-217	322425	1057755	
42	75	35	4275-35-218	322526	1057851	
42	75	35	4275-35-219	322625	1057951	
42	75	35	4275-35-22	320527	1057249	
42	75	35	4275-35-220	321826	1057945	
42	75	35	4275-35-221	322023	1058054	
42	75	35	4275-35-222	322225	1058154	
42	75	35	4275-35-223	322324	1058155	
42	75	35	4275-35-224	322724	1057950	
42	75	35	4275-35-225	322824	1057950	
42	75	35	4275-35-226	322924	1057949	
42	75	35	4275-35-227	323019	1058054	
42	75	35	4275-35-228	322724	1058354	
42	75	35	4275-35-229	322726	1058454	
42	75	35	4275-35-23	320526	1057652	
42	75	35	4275-35-230	322922	1058657	
42	75	35	4275-35-231	323027	1058556	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-232	323023	1058656	
42	75	35	4275-35-233	323124	1058755	
42	75	35	4275-35-234	323224	1058856	
42	75	35	4275-35-235	323323	1058956	
42	75	35	4275-35-236	323422	1059058	
42	75	35	4275-35-237	323516	1059158	
42	75	35	4275-35-238	323620	1059255	
42	75	35	4275-35-239	323622	1059158	
42	75	35	4275-35-24	320527	1060449	
42	75	35	4275-35-240	323622	1059059	
42	75	35	4275-35-241	323621	1058958	
42	75	35	4275-35-242	323620	1058660	
42	75	35	4275-35-243	323522	1059455	
42	75	35	4275-35-244	323521	1059653	
42	75	35	4275-35-245	323721	1059855	
42	75	35	4275-35-246	323920	1060253	
42	75	35	4275-35-247	321627	1057451	
42	75	35	4275-35-248	323223	1058955	
42	75	35	4275-35-249	323123	1058855	
42	75	35	4275-35-25	320930	1059049	
42	75	35	4275-35-250	322927	1058554	
42	75	35	4275-35-251	322824	1058453	
42	75	35	4275-35-252	322725	1058553	
42	75	35	4275-35-253	322627	1058454	
42	75	35	4275-35-254	322625	1058354	
42	75	35	4275-35-255	323119	1058058	
42	75	35	4275-35-256	323024	1057950	
42	75	35	4275-35-257	322920	1057852	
42	75	35	4275-35-258	322825	1057850	
42	75	35	4275-35-259	322724	1057850	
42	75	35	4275-35-26	320929	1059849	
42	75	35	4275-35-260	322623	1057850	
42	75	35	4275-35-261	322527	1057750	
42	75	35	4275-35-262	322432	1057652	
42	75	35	4275-35-263	322330	1057551	
42	75	35	4275-35-264	322232	1057551	
42	75	35	4275-35-265	321922	1057451	
42	75	35	4275-35-266	321825	1057356	
42	75	35	4275-35-267	321726	1057253	
42	75	35	4275-35-268	321625	1057350	
42	75	35	4275-35-269	321426	1057447	
42	75	35	4275-35-27	320910	1060451	
42	75	35	4275-35-270	321526	1057548	
42	75	35	4275-35-271	321524	1057753	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-272	321623	1057953	
42	75	35	4275-35-273	321827	1058047	
42	75	35	4275-35-274	321925	1058052	
42	75	35	4275-35-275	322025	1058153	
42	75	35	4275-35-276	320324	1056852	
42	75	35	4275-35-277	320527	1056454	
42	75	35	4275-35-278	323422	1059157	
42	75	35	4275-35-279	322124	1058152	
42	75	35	4275-35-28	320528	1060049	
42	75	35	4275-35-280	321520	1057952	
42	75	35	4275-35-281	321526	1057349	
42	75	35	4275-35-282	322724	1058050	
42	75	35	4275-35-283	323219	1058059	
42	75	35	4275-35-284	323125	1057949	
42	75	35	4275-35-285	323023	1057850	
42	75	35	4275-35-286	323122	1057850	
42	75	35	4275-35-287	323124	1058154	
42	75	35	4275-35-288	322624	1057751	
42	75	35	4275-35-289	322724	1057749	
42	75	35	4275-35-29	320530	1059648	
42	75	35	4275-35-290	322822	1057752	
42	75	35	4275-35-291	322924	1057748	
42	75	35	4275-35-292	323022	1057748	
42	75	35	4275-35-293	322430	1057554	
42	75	35	4275-35-294	322332	1057451	
42	75	35	4275-35-295	322230	1057450	
42	75	35	4275-35-296	322122	1057553	
42	75	35	4275-35-297	321919	1057354	
42	75	35	4275-35-298	321813	1057255	
42	75	35	4275-35-299	321724	1057154	
42	75	35	4275-35-3	321349	1058036	
42	75	35	4275-35-30	320526	1058051	
42	75	35	4275-35-300	321622	1057253	
42	75	35	4275-35-301	321924	1058154	
42	75	35	4275-35-302	323320	1059158	
42	75	35	4275-35-303	323420	1059257	
42	75	35	4275-35-304	323224	1057949	
42	75	35	4275-35-305	322928	1057650	
42	75	35	4275-35-306	322829	1057650	
42	75	35	4275-35-307	322729	1057650	
42	75	35	4275-35-308	322628	1057651	
42	75	35	4275-35-309	322430	1057455	
42	75	35	4275-35-31	320524	1057851	
42	75	35	4275-35-310	322334	1057352	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-311	322234	1057352	
42	75	35	4275-35-312	322119	1057462	
42	75	35	4275-35-313	322020	1057358	
42	75	35	4275-35-314	322018	1057257	
42	75	35	4275-35-315	321919	1057256	
42	75	35	4275-35-316	321832	1057154	
42	75	35	4275-35-317	321725	1057054	
42	75	35	4275-35-318	321626	1057151	
42	75	35	4275-35-319	322020	1057453	
42	75	35	4275-35-32	320724	1057851	
42	75	35	4275-35-320	322120	1057364	
42	75	35	4275-35-321	321932	1057155	
42	75	35	4275-35-322	321836	1057053	
42	75	35	4275-35-323	321326	1056653	
42	75	35	4275-35-324	320926	1056451	
42	75	35	4275-35-325	321626	1056953	
42	75	35	4275-35-326	321725	1056951	
42	75	35	4275-35-327	321827	1056954	
42	75	35	4275-35-328	321926	1057052	
42	75	35	4275-35-329	321624	1057052	
42	75	35	4275-35-33	320927	1057851	
42	75	35	4275-35-330	322028	1057152	
42	75	35	4275-35-331	322121	1057250	
42	75	35	4275-35-332	323222	1057853	
42	75	35	4275-35-333	322927	1057546	
42	75	35	4275-35-334	322823	1057551	
42	75	35	4275-35-335	322724	1057550	
42	75	35	4275-35-336	322623	1057552	
42	75	35	4275-35-337	322521	1057527	
42	75	35	4275-35-338	321524	1056951	
42	75	35	4275-35-339	322025	1057052	
42	75	35	4275-35-34	321125	1057852	
42	75	35	4275-35-340	321926	1056954	
42	75	35	4275-35-341	321526	1057055	
42	75	35	4275-35-342	321525	1056852	
42	75	35	4275-35-343	321626	1056852	
42	75	35	4275-35-344	321725	1056853	
42	75	35	4275-35-345	321827	1056852	
42	75	35	4275-35-346	321925	1056853	
42	75	35	4275-35-347	322025	1056954	
42	75	35	4275-35-348	322924	1057453	
42	75	35	4275-35-349	322825	1057451	
42	75	35	4275-35-35	321326	1057852	
42	75	35	4275-35-350	322724	1057453	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-351	322624	1057454	
42	75	35	4275-35-352	322524	1057454	
42	75	35	4275-35-353	321424	1056852	
42	75	35	4275-35-354	321425	1056753	
42	75	35	4275-35-355	321526	1056752	
42	75	35	4275-35-356	321625	1056753	
42	75	35	4275-35-357	321725	1056753	
42	75	35	4275-35-358	321826	1056754	
42	75	35	4275-35-359	322623	1057351	
42	75	35	4275-35-36	321526	1057852	
42	75	35	4275-35-360	322724	1057354	
42	75	35	4275-35-361	322824	1057352	
42	75	35	4275-35-362	322523	1057349	
42	75	35	4275-35-363	321528	1056653	
42	75	35	4275-35-364	321627	1056654	
42	75	35	4275-35-365	321731	1056653	
42	75	35	4275-35-366	321428	1056653	
42	75	35	4275-35-367	325321	1055452	
42	75	35	4275-35-368	325343	1059499	
42	75	35	4275-35-369	323521	1058759	
42	75	35	4275-35-37	321725	1057852	
42	75	35	4275-35-370	323520	1058659	
42	75	35	4275-35-371	323522	1058558	
42	75	35	4275-35-372	321423	1057851	
42	75	35	4275-35-373	321529	1056553	
42	75	35	4275-35-374	321622	1056554	
42	75	35	4275-35-375	320726	1056952	
42	75	35	4275-35-376	320628	1057049	
42	75	35	4275-35-377	320627	1056947	
42	75	35	4275-35-378	320425	1057256	
42	75	35	4275-35-379	320326	1057246	
42	75	35	4275-35-38	321926	1057853	
42	75	35	4275-35-380	320537	1056039	
42	75	35	4275-35-381	324246	1056708	
42	75	35	4275-35-382	325325	1056657	
42	75	35	4275-35-383	324624	1057104	
42	75	35	4275-35-384	324642	1056702	
42	75	35	4275-35-385	323174	1058656	274.4
42	75	35	4275-35-386	323124	1058606	276
42	75	35	4275-35-387	323222	1058606	276
42	75	35	4275-35-388	323123	1058504	271
42	75	35	4275-35-389	322977	1058450	276.8
42	75	35	4275-35-39	322125	1057853	
42	75	35	4275-35-390	323123	1058405	257.8

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-391	323076	1058352	256
42	75	35	4275-35-392	323074	1058252	250
42	75	35	4275-35-393	323023	1058203	250
42	75	35	4275-35-394	322972	1058151	250
42	75	35	4275-35-395	323018	1058101	257.9
42	75	35	4275-35-396	322724	1058000	237
42	75	35	4275-35-397	322624	1058002	233
42	75	35	4275-35-398	322374	1058053	215.9
42	75	35	4275-35-399	322269	1058051	216
42	75	35	4275-35-4	320141	1057618	
42	75	35	4275-35-40	322325	1057854	
42	75	35	4275-35-400	322175	1058054	214
42	75	35	4275-35-4000	321824.4	1060399	761.4
42	75	35	4275-35-4001	321925.2	1060396	761.8
42	75	35	4275-35-4002	322029.1	1060401	
42	75	35	4275-35-4003	322025.9	1059997	
42	75	35	4275-35-4004	322193.3	1059894	
42	75	35	4275-35-4005	322346.1	1059785	
42	75	35	4275-35-4006	322424.3	1059558	
42	75	35	4275-35-4007	322526.8	1059560	
42	75	35	4275-35-4008	322624.6	1059558	
42	75	35	4275-35-4009	323270.9	1059465	
42	75	35	4275-35-401	322175	1057953	215.9
42	75	35	4275-35-4011	323485.2	1059572	
42	75	35	4275-35-4012	323580.4	1059561	
42	75	35	4275-35-4013	323719.1	1059167	
42	75	35	4275-35-4014	323567.4	1059167	
42	75	35	4275-35-4015	323120.8	1059062	
42	75	35	4275-35-4016	323123.9	1058964	
42	75	35	4275-35-4017	323081.9	1058568	
42	75	35	4275-35-4018	323171.7	1058522	
42	75	35	4275-35-4019	323075.6	1058422	
42	75	35	4275-35-402	322374	1057951	217
42	75	35	4275-35-4020	322993.1	1058420	
42	75	35	4275-35-4021	323025	1058311	
42	75	35	4275-35-4022	322977.8	1058210	
42	75	35	4275-35-4023	322777.8	1058207	299.9
42	75	35	4275-35-4024	322774.8	1058112	298.6
42	75	35	4275-35-4025	322775.2	1058009	763.5
42	75	35	4275-35-4026	323074.7	1058009	298.5
42	75	35	4275-35-4027	322972.9	1057856	298
42	75	35	4275-35-4028	322672.8	1057915	761.8
42	75	35	4275-35-4029	322473.7	1057908	297.9
42	75	35	4275-35-403	322474	1057951	213.9

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-4030	323026.8	1057547	300.9
42	75	35	4275-35-4031	322813	1056965	302.4
42	75	35	4275-35-4032	322465.8	1057109	762.8
42	75	35	4275-35-4033	322377.5	1057111	301.5
42	75	35	4275-35-4034	322378.5	1057308	298.5
42	75	35	4275-35-4035	322074.6	1057908	297.6
42	75	35	4275-35-4036	321774.1	1057813	298.4
42	75	35	4275-35-4037	321576	1057811	301
42	75	35	4275-35-4038	321776.3	1056912	301.9
42	75	35	4275-35-4039	321626.3	1056913	299
42	75	35	4275-35-404	322525	1057901	236.9
42	75	35	4275-35-4040	321324.8	1056708	300.5
42	75	35	4275-35-4041	321056.3	1056808	173
42	75	35	4275-35-4042	320675.4	1057809	300.5
42	75	35	4275-35-4043	320676.4	1056810	301.5
42	75	35	4275-35-4044	320571.6	1056760	301.9
42	75	35	4275-35-4045	320524.8	1056610	300.5
42	75	35	4275-35-4046	320628.6	1056358	299.4
42	75	35	4275-35-4048	320519	1055558	639.3
42	75	35	4275-35-4049	320195.5	1056735	301
42	75	35	4275-35-405	322572	1057853	217.9
42	75	35	4275-35-4050	322520.7	1058364	297.9
42	75	35	4275-35-4051C	320554	1056623	217.1
42	75	35	4275-35-4052C	322795.5	1058224	220.4
42	75	35	4275-35-4053	323089.2	1058308	299.6
42	75	35	4275-35-4054	322890.8	1058257	298.4
42	75	35	4275-35-4055	322789.1	1058259	297.4
42	75	35	4275-35-4056	322675.8	1058173	299
42	75	35	4275-35-4057	322061.5	1057821	298
42	75	35	4275-35-4058	321790	1056964	299.5
42	75	35	4275-35-4059	321710.3	1056987	298.9
42	75	35	4275-35-406	322474	1057851	203.9
42	75	35	4275-35-4060	321674.1	1056862	297.9
42	75	35	4275-35-4061	321361.8	1056856	297.4
42	75	35	4275-35-4062	321573	1056763	297
42	75	35	4275-35-4063	321776.4	1056812	149
42	75	35	4275-35-4064	321674.9	1056763	299
42	75	35	4275-35-4065	321715.8	1057220	298.5
42	75	35	4275-35-4066	320979.6	1057012	298.9
42	75	35	4275-35-4067	320678.1	1056957	298.9
42	75	35	4275-35-4068	321025.9	1057479	297.5
42	75	35	4275-35-4069	320877.9	1057713	298.5
42	75	35	4275-35-407	322376	1057853	216.9
42	75	35	4275-35-4070	320775.1	1057809	300

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-4071	320675.7	1057711	294.6
42	75	35	4275-35-4072	320126.2	1057302	295.6
42	75	35	4275-35-408	321827	1057802	215.9
42	75	35	4275-35-409	321877	1057752	213
42	75	35	4275-35-41	320326	1057651	
42	75	35	4275-35-410	322075	1057752	235
42	75	35	4275-35-411	322171	1057752	214.5
42	75	35	4275-35-412	322272	1057754	217.1
42	75	35	4275-35-413	322475	1057755	216.9
42	75	35	4275-35-4138	320571.8	1056485	298.9
42	75	35	4275-35-4139	320486.9	1056646	299.1
42	75	35	4275-35-414	322721	1057802	236.6
42	75	35	4275-35-4140	322129.6	1060401	762
42	75	35	4275-35-4141	322199.7	1057842	294.6
42	75	35	4275-35-4142	322644.6	1058087	302.5
42	75	35	4275-35-415	322772	1057749	232
42	75	35	4275-35-4154	321801	1057356	300.3
42	75	35	4275-35-4156	321961.2	1057215	294.6
42	75	35	4275-35-4157	320585.5	1056926	301.2
42	75	35	4275-35-416	322874	1057751	237.9
42	75	35	4275-35-417	322879	1057653	234.6
42	75	35	4275-35-418	322571	1057653	217
42	75	35	4275-35-419	322469	1057653	217.8
42	75	35	4275-35-42	320719	1057650	
42	75	35	4275-35-420	322525	1057702	218
42	75	35	4275-35-421	322428	1057705	212.8
42	75	35	4275-35-422	322380	1057652	212.9
42	75	35	4275-35-423	322275	1057642	211.9
42	75	35	4275-35-424	322175	1057651	210.9
42	75	35	4275-35-425	322075	1057654	237.9
42	75	35	4275-35-426	321825	1057702	213.9
42	75	35	4275-35-427	321924	1057601	216
42	75	35	4275-35-428	321769	1057552	216
42	75	35	4275-35-429	321863	1057552	216.8
42	75	35	4275-35-43	321127	1057652	
42	75	35	4275-35-430	322674	1057551	215.9
42	75	35	4275-35-431	322774	1057550	232.8
42	75	35	4275-35-432	322874	1057549	236.9
42	75	35	4275-35-433	321873	1057453	215
42	75	35	4275-35-434	321917	1057405	214.8
42	75	35	4275-35-435	321832	1057105	216
42	75	35	4275-35-436	321724	1057104	216
42	75	35	4275-35-437	321781	1057053	216.9
42	75	35	4275-35-438	321881	1057052	216.9

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-439	321830	1057002	217.9
42	75	35	4275-35-44	321725	1057652	
42	75	35	4275-35-440	321879	1056953	216
42	75	35	4275-35-441	321778	1057153	211
42	75	35	4275-35-442	321777	1057252	218
42	75	35	4275-35-443	321724	1057405	217
42	75	35	4275-35-444	321721	1057602	218
42	75	35	4275-35-445	321978	1057951	232.6
42	75	35	4275-35-446	322072	1058048	216
42	75	35	4275-35-447	323174	1058557	275.9
42	75	35	4275-35-448	323173	1058454	272.9
42	75	35	4275-35-449	322674	1058000	236
42	75	35	4275-35-45	320128	1057451	
42	75	35	4275-35-450	322571	1058005	236.9
42	75	35	4275-35-451	322527	1057801	235
42	75	35	4275-35-452	322424	1057803	212.9
42	75	35	4275-35-453	322729	1057604	217
42	75	35	4275-35-454	322474	1057546	217
42	75	35	4275-35-455	322525	1057606	246.9
42	75	35	4275-35-456	322323	1057898	216.9
42	75	35	4275-35-457	322240	1057905	217
42	75	35	4275-35-458	321925	1057901	215
42	75	35	4275-35-459	321925	1058005	217.9
42	75	35	4275-35-46	320326	1057451	
42	75	35	4275-35-460	322217	1058018	215
42	75	35	4275-35-461	322420	1058004	217
42	75	35	4275-35-462	322421	1057899	213
42	75	35	4275-35-463	322378	1057754	209.7
42	75	35	4275-35-464	322327	1057705	217.9
42	75	35	4275-35-465	322225	1057703	217.9
42	75	35	4275-35-466	322030	1057705	200
42	75	35	4275-35-467	322123	1058004	213
42	75	35	4275-35-468	322127	1057903	212
42	75	35	4275-35-469	322327	1058003	200
42	75	35	4275-35-47	320524	1057452	
42	75	35	4275-35-470	321769	1057601	217
42	75	35	4275-35-471	321818	1057603	216
42	75	35	4275-35-472	321873	1057602	216
42	75	35	4275-35-473	321771	1057502	216
42	75	35	4275-35-474	321867	1057500	217
42	75	35	4275-35-475	321819	1057500	214.9
42	75	35	4275-35-476	321773	1057751	209.9004
42	75	35	4275-35-477	322623	1057600	215
42	75	35	4275-35-478	322573	1057603	210

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-479	322622	1057702	216
42	75	35	4275-35-48	320721	1057450	
42	75	35	4275-35-480	322573	1057701	217
42	75	35	4275-35-481	322476	1057702	216
42	75	35	4275-35-482	322575	1057801	198
42	75	35	4275-35-483	322475	1057802	203
42	75	35	4275-35-484	322376	1057803	217
42	75	35	4275-35-485	322375	1057901	217
42	75	35	4275-35-486	322624	1058102	250
42	75	35	4275-35-487	322672	1058105	249.5
42	75	35	4275-35-488	322677	1057599	215.9
42	75	35	4275-35-489	322776	1057600	209.9
42	75	35	4275-35-49	320926	1057452	
42	75	35	4275-35-490	322826	1057601	216
42	75	35	4275-35-491	322774	1057652	216.9
42	75	35	4275-35-492	322679	1057652	216.9
42	75	35	4275-35-493	322677	1057699	216.8
42	75	35	4275-35-494	322728	1057699	209
42	75	35	4275-35-495	322777	1057699	216
42	75	35	4275-35-496	322828	1057700	217
42	75	35	4275-35-497	322877	1057698	213.9
42	75	35	4275-35-498	322673	1057751	213.9
42	75	35	4275-35-499	322573	1057751	217
42	75	35	4275-35-5	321336	1057619	
42	75	35	4275-35-50	321125	1057451	
42	75	35	4275-35-500	322619	1057800	216.7
42	75	35	4275-35-501	322674	1057801	212.9
42	75	35	4275-35-502	322674	1057951	218
42	75	35	4275-35-503	322522	1058005	216
42	75	35	4275-35-504	322471	1058005	213.9
42	75	35	4275-35-505	322474	1058052	214.8
42	75	35	4275-35-506	321779	1057003	210
42	75	35	4275-35-507	321881	1057003	216
42	75	35	4275-35-508	321929	1057104	215
42	75	35	4275-35-509	321880	1057104	217
42	75	35	4275-35-51	322325	1058054	
42	75	35	4275-35-510	321778	1057104	215.9
42	75	35	4275-35-511	321885	1057153	216
42	75	35	4275-35-512	321926	1057204	215.9
42	75	35	4275-35-513	321878	1057204	217
42	75	35	4275-35-514	321825	1057211	215.9
42	75	35	4275-35-515	321779	1057203	215.6
42	75	35	4275-35-516	321873	1057254	215.9
42	75	35	4275-35-517	321919	1057305	217

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-518	321871	1057406	200
42	75	35	4275-35-519	321819	1057412	216.9
42	75	35	4275-35-52	322324	1058254	
42	75	35	4275-35-520	321773	1057457	210
42	75	35	4275-35-521	322074	1058007	211.8
42	75	35	4275-35-522	321927	1057702	215
42	75	35	4275-35-523	321876	1057703	216.9
42	75	35	4275-35-524	322175	1057703	213.9
42	75	35	4275-35-525	322187	1057806	212
42	75	35	4275-35-526	322177	1057901	215
42	75	35	4275-35-527	322073	1057707	216
42	75	35	4275-35-528C	322892	1057976	253
42	75	35	4275-35-529C	321720	1057010	216
42	75	35	4275-35-53	322324	1058453	
42	75	35	4275-35-530C	322573	1057553	201.9
42	75	35	4275-35-531C	323074	1058454	274
42	75	35	4275-35-532C	321726	1057303	236.9
42	75	35	4275-35-533C	321979	1057704	206
42	75	35	4275-35-534C	322577	1058051	233
42	75	35	4275-35-535C	321828	1057304	216.9
42	75	35	4275-35-536C	321777	1057303	217
42	75	35	4275-35-537C	323027	1058504	295
42	75	35	4275-35-538C	322574	1058153	237
42	75	35	4275-35-539C	322575	1058104	231
42	75	35	4275-35-54	322324	1058654	
42	75	35	4275-35-540C	321979	1057755	211.9
42	75	35	4275-35-541C	323273	1058505	276
42	75	35	4275-35-542C	321875	1057305	214
42	75	35	4275-35-543C	323023	1057901	214
42	75	35	4275-35-544C	323272	1058555	275
42	75	35	4275-35-545C	323272	1058607	270
42	75	35	4275-35-546C	322986	1058560	292
42	75	35	4275-35-547C	321977	1057803	215.8
42	75	35	4275-35-548C	322574	1058206	233
42	75	35	4275-35-549C	322971	1057901	231.9
42	75	35	4275-35-55	322323	1058853	
42	75	35	4275-35-550C	321978	1057902	212
42	75	35	4275-35-551C	323273	1058656	276
42	75	35	4275-35-552C	323271	1058452	270.9
42	75	35	4275-35-553C	322575	1058253	233
42	75	35	4275-35-554C	321981	1057654	213.9
42	75	35	4275-35-555C	323073	1057903	255
42	75	35	4275-35-556C	321975	1058004	211.8
42	75	35	4275-35-557C	322774	1057801	

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-558	322826	1057800	224.9
42	75	35	4275-35-559C	321974	1058052	
42	75	35	4275-35-56	322524	1058853	
42	75	35	4275-35-560C	322925	1057797	
42	75	35	4275-35-561	320121.4	1057059	
42	75	35	4275-35-562	320320	1057046	257.9
42	75	35	4275-35-563	320321	1056649	237.9
42	75	35	4275-35-564	320718	1056649	238
42	75	35	4275-35-565	320920.1	1056059	
42	75	35	4275-35-566	320071.9	1055659	
42	75	35	4275-35-567	320518.9	1055658	
42	75	35	4275-35-568C	321981	1057603	
42	75	35	4275-35-569C	322576.1	1058317	
42	75	35	4275-35-57	322522	1059253	
42	75	35	4275-35-570C	322907	1058427	
42	75	35	4275-35-571C	322575	1058353	
42	75	35	4275-35-572C	322925	1058607	
42	75	35	4275-35-573C	322909	1058477	
42	75	35	4275-35-574C	322903	1058526	
42	75	35	4275-35-575C	322573	1058403	
42	75	35	4275-35-576C	322872	1058660	
42	75	35	4275-35-577C	321973	1058101	
42	75	35	4275-35-578C	321671	1057802	253.9
42	75	35	4275-35-579C	321877	1057808	
42	75	35	4275-35-58	322922	1060052	
42	75	35	4275-35-580C	322125	1057808	206.9
42	75	35	4275-35-581C	322275	1057808	207.9
42	75	35	4275-35-582C	322275	1057953	204
42	75	35	4275-35-583C	321840	1057527	216
42	75	35	4275-35-584C	321968	1057306	211.8
42	75	35	4275-35-585C	321908	1057129	214.9
42	75	35	4275-35-586C	321731	1056903	215
42	75	35	4275-35-587C	321725	1056803	213.9
42	75	35	4275-35-588C	322573	1057902	233.9
42	75	35	4275-35-589C	322726	1057902	228.9
42	75	35	4275-35-59	323721	1060053	
42	75	35	4275-35-590C	322873	1057900	252.9
42	75	35	4275-35-591C	322724	1057501	214
42	75	35	4275-35-592C	322773	1058354	252.9
42	75	35	4275-35-593C	323074	1058202	250.8
42	75	35	4275-35-594C	323123	1058704	275.8
42	75	35	4275-35-595	323072	1058656	269
42	75	35	4275-35-596	323373	1058454	273.9
42	75	35	4275-35-597	323324	1058403	275

Table 2.6-1 Moore Ranch Drill Holes

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-598	323371	1058556	277.8
42	75	35	4275-35-599	323123	1058302	296.9
42	75	35	4275-35-6	321324	1060450	
42	75	35	4275-35-60	323319	1060056	
42	75	35	4275-35-600	322874	1058454	273
42	75	35	4275-35-601	323123	1058107	274
42	75	35	4275-35-602	323169	1058059	251.9
42	75	35	4275-35-603	323177	1057947	252
42	75	35	4275-35-604	323124	1057897	251
42	75	35	4275-35-605	323072	1057850	231
42	75	35	4275-35-606	322927	1057698	215
42	75	35	4275-35-607	322824	1057501	213.9
42	75	35	4275-35-608	322723	1057401	194.9
42	75	35	4275-35-609	322622	1057405	192.8
42	75	35	4275-35-61	322722	1059653	
42	75	35	4275-35-610	322478	1057455	197.8
42	75	35	4275-35-611	322525	1058203	
42	75	35	4275-35-612	322473	1058155	236
42	75	35	4275-35-613	322229	1058099	203.8
42	75	35	4275-35-614	322024	1058102	211.9
42	75	35	4275-35-615	321873	1058049	213.8
42	75	35	4275-35-616	321875	1057947	213
42	75	35	4275-35-617	321825	1057898	216.8
42	75	35	4275-35-618	321725	1057905	213
42	75	35	4275-35-619	321625	1057901	205.9
42	75	35	4275-35-62	322922	1059253	
42	75	35	4275-35-620	321524	1057901	211.9
42	75	35	4275-35-621	321474	1057850	215
42	75	35	4275-35-622	321524	1057702	213.9
42	75	35	4275-35-623	321576	1057651	210.9
42	75	35	4275-35-624	321627	1057601	212.9
42	75	35	4275-35-625	321677	1057500	211.8
42	75	35	4275-35-626	321675	1057351	213.9
42	75	35	4275-35-627	321676	1057254	214
42	75	35	4275-35-628	321674	1057149	212.9
42	75	35	4275-35-629	321623	1057100	212
42	75	35	4275-35-63	322924	1058854	
42	75	35	4275-35-630	321576	1057053	214.9
42	75	35	4275-35-631	321576	1056952	213.8
42	75	35	4275-35-632	321474	1056852	211.7
42	75	35	4275-35-633	321475	1056753	213.9
42	75	35	4275-35-634	321527	1056701	214.9
42	75	35	4275-35-635	321776	1056755	214.7
42	75	35	4275-35-636	321876	1056850	212

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-637	321874	1056904	215
42	75	35	4275-35-638	321976	1057051	213
42	75	35	4275-35-639	321979	1057151	211.9
42	75	35	4275-35-64	320929	1057071	
42	75	35	4275-35-640	321675	1057303	215.9
42	75	35	4275-35-641	321675	1057199	216
42	75	35	4275-35-642	321674	1057098	214
42	75	35	4275-35-643	321575	1057005	215
42	75	35	4275-35-644	321525	1056912	
42	75	35	4275-35-645	321870	1056800	212
42	75	35	4275-35-646	321923	1057002	210
42	75	35	4275-35-647	321976	1057102	212.9
42	75	35	4275-35-648	322383	1057454	193.9
42	75	35	4275-35-649	322379	1057547	197.9
42	75	35	4275-35-65	321326	1057286	
42	75	35	4275-35-650	322480	1057506	197
42	75	35	4275-35-651	322530	1057399	192.9
42	75	35	4275-35-652	321826	1057994	
42	75	35	4275-35-653	321873	1058000	209
42	75	35	4275-35-654	321676	1057653	216.9
42	75	35	4275-35-655	321873	1058099	206
42	75	35	4275-35-656	321924	1058097	180
42	75	35	4275-35-657	322273	1058101	210.9
42	75	35	4275-35-658	323075	1058151	256.9
42	75	35	4275-35-659	321774	1057901	217
42	75	35	4275-35-66	323319	1060453	
42	75	35	4275-35-660	321775	1057948	235.9
42	75	35	4275-35-661	323172	1058000	256.9
42	75	35	4275-35-662	323221	1058002	257
42	75	35	4275-35-663	321675	1057400	189
42	75	35	4275-35-664	322673	1057400	192
42	75	35	4275-35-665	322775	1057452	214.9
42	75	35	4275-35-666	322878	1057603	217.9
42	75	35	4275-35-667	322975	1057749	216.9
42	75	35	4275-35-668	323026	1057803	216.9
42	75	35	4275-35-669	322174	1058102	213.8
42	75	35	4275-35-67	323720	1060453	
42	75	35	4275-35-670	322073	1058101	215.9
42	75	35	4275-35-671C	322427	1058105	233
42	75	35	4275-35-672C	323074	1058202	262
42	75	35	4275-35-673C	323038	1058606	281.9
42	75	35	4275-35-674C	321472	1057751	
42	75	35	4275-35-675	321475	1057802	218
42	75	35	4275-35-676	321575	1057903	217.8

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-677	321575	1057954	236
42	75	35	4275-35-678	321673	1057952	235.8
42	75	35	4275-35-679	321673	1057901	216.7
42	75	35	4275-35-68	323321	1059654	
42	75	35	4275-35-680	321972	1057552	216.9
42	75	35	4275-35-681	321921	1057504	216.8
42	75	35	4275-35-682	321972	1057404	206.7
42	75	35	4275-35-683	321968	1057356	217.9
42	75	35	4275-35-684	322018	1057308	216.8
42	75	35	4275-35-685	321976	1057207	217.9
42	75	35	4275-35-686	322175	1057458	
42	75	35	4275-35-687	322329	1057501	208.8
42	75	35	4275-35-688	322378	1057500	
42	75	35	4275-35-689	322431	1057504	
42	75	35	4275-35-69	322933	1058453	
42	75	35	4275-35-690	322976	1057698	217
42	75	35	4275-35-691	323069	1057779	217
42	75	35	4275-35-692	323174	1057898	237
42	75	35	4275-35-693	323173	1058111	255.8
42	75	35	4275-35-694	323123	1058205	305.9
42	75	35	4275-35-695	323173	1058304	276.8
42	75	35	4275-35-696	323373	1058507	276.9
42	75	35	4275-35-697	323425	1058504	276.9
42	75	35	4275-35-698	323173	1058158	256.9
42	75	35	4275-35-699	323275	1058356	274.9
42	75	35	4275-35-7	320929	1060248	
42	75	35	4275-35-70	320929	1056853	
42	75	35	4275-35-700	323275	1058406	276.9
42	75	35	4275-35-701	323420	1058607	277
42	75	35	4275-35-702	323373	1058608	276.9
42	75	35	4275-35-703	323373	1058655	277
42	75	35	4275-35-704	323324	1058705	277
42	75	35	4275-35-705	323272	1058706	277
42	75	35	4275-35-706	323221	1058707	276.9
42	75	35	4275-35-707	323170	1058700	270.8
42	75	35	4275-35-708	322979	1058609	281.5
42	75	35	4275-35-709	322824	1058402	256.9
42	75	35	4275-35-71	321125	1057053	
42	75	35	4275-35-710	322725	1058403	273.9
42	75	35	4275-35-711	322675	1058303	255.9
42	75	35	4275-35-712	322626	1058304	254.8
42	75	35	4275-35-713	322477	1058205	254.8
42	75	35	4275-35-714	322376	1058105	214
42	75	35	4275-35-715	322325	1058105	214

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-716	322273	1058157	215
42	75	35	4275-35-717	322173	1058155	234.8
42	75	35	4275-35-718	322123	1058105	217
42	75	35	4275-35-719	322075	1058154	233.9
42	75	35	4275-35-72	320729	1057050	
42	75	35	4275-35-720	321975	1058154	236.9
42	75	35	4275-35-721	321475	1057901	216.9
42	75	35	4275-35-722	321423	1057802	216
42	75	35	4275-35-723	321474	1057701	216.9
42	75	35	4275-35-724	321579	1057597	214.6
42	75	35	4275-35-725	321628	1057502	215.9
42	75	35	4275-35-726	321627	1057400	212.7
42	75	35	4275-35-727	321572	1057450	210.7
42	75	35	4275-35-728	321677	1057452	217
42	75	35	4275-35-729	321575	1056653	215
42	75	35	4275-35-73	320927	1057154	
42	75	35	4275-35-730	321678	1056655	213.9
42	75	35	4275-35-731	321776	1056706	213.9
42	75	35	4275-35-732	321828	1056702	216
42	75	35	4275-35-733	321877	1056754	214.9
42	75	35	4275-35-734	321927	1056901	216.9
42	75	35	4275-35-735	322020	1057200	212.9
42	75	35	4275-35-736	322070	1057300	175.9
42	75	35	4275-35-737	322066	1057360	216.9
42	75	35	4275-35-738	322119	1057413	217.9
42	75	35	4275-35-739	322067	1057412	214.5
42	75	35	4275-35-74	321125	1057253	
42	75	35	4275-35-740	322020	1057407	217
42	75	35	4275-35-741	322069	1057461	212.9
42	75	35	4275-35-742	321970	1057453	218
42	75	35	4275-35-743	322120	1057510	208.7
42	75	35	4275-35-744	322070	1057506	215.9
42	75	35	4275-35-745	322019	1057505	216
42	75	35	4275-35-746	321970	1057501	218
42	75	35	4275-35-747	322070	1057556	215
42	75	35	4275-35-748	322072	1057604	214.9
42	75	35	4275-35-749	322122	1057603	211.7
42	75	35	4275-35-75	323518	1059255	
42	75	35	4275-35-750	322170	1057605	217
42	75	35	4275-35-751	322120	1057700	213.9
42	75	35	4275-35-752	322275	1057706	209
42	75	35	4275-35-753	322377	1057704	209.8
42	75	35	4275-35-754	322328	1057604	212
42	75	35	4275-35-755	322379	1057599	215

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-756	322432	1057605	213.9
42	75	35	4275-35-757	322481	1057603	215
42	75	35	4275-35-758	322026	1057102	211
42	75	35	4275-35-759	322167	1057420	211.8
42	75	35	4275-35-76	323718	1059063	
42	75	35	4275-35-760	322280	1057451	213.9
42	75	35	4275-35-761	322331	1057400	213
42	75	35	4275-35-762	322477	1057406	190
42	75	35	4275-35-763	322520	1057500	213.6
42	75	35	4275-35-764	322576	1057452	197.9
42	75	35	4275-35-765	322572	1057401	197
42	75	35	4275-35-766	322674	1057453	211
42	75	35	4275-35-767	322770	1057400	216
42	75	35	4275-35-768	322823	1057400	216
42	75	35	4275-35-769	323172	1058209	276
42	75	35	4275-35-77	323520	1058958	
42	75	35	4275-35-770	323172	1058258	269.9
42	75	35	4275-35-771	323220	1058306	242.9
42	75	35	4275-35-772	323471	1058607	274.9
42	75	35	4275-35-773	323472	1058660	270
42	75	35	4275-35-774	323474	1058708	270
42	75	35	4275-35-775	323423	1058700	274.9
42	75	35	4275-35-776	323374	1058704	226
42	75	35	4275-35-777	323273	1058754	271.9
42	75	35	4275-35-778	323171	1058754	271
42	75	35	4275-35-779	323073	1058705	274
42	75	35	4275-35-78	320126	1057343	
42	75	35	4275-35-780	323170	1058606	272.7
42	75	35	4275-35-781	323077	1058606	274
42	75	35	4275-35-782	322976	1058499	275.9
42	75	35	4275-35-783	322775	1058452	272.9
42	75	35	4275-35-784	322778	1058401	274
42	75	35	4275-35-785	322677	1058402	274.8
42	75	35	4275-35-786	322725	1058301	255
42	75	35	4275-35-787	322677	1058254	254.8
42	75	35	4275-35-788	322625	1058202	235
42	75	35	4275-35-789	323175	1058357	273.9
42	75	35	4275-35-79	323421	1058858	
42	75	35	4275-35-790	323224	1058403	273
42	75	35	4275-35-791	321875	1058156	235.9
42	75	35	4275-35-792	321823	1058100	236
42	75	35	4275-35-793	321776	1057987	235
42	75	35	4275-35-794	321475	1057953	214.9
42	75	35	4275-35-795	321427	1057903	215

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-796	321371	1057849	215
42	75	35	4275-35-797	321373	1057803	216
42	75	35	4275-35-798	321525	1057601	214.9
42	75	35	4275-35-799	321578	1057548	213.4
42	75	35	4275-35-8	321724	1059451	
42	75	35	4275-35-80	320524	1057552	
42	75	35	4275-35-800	321678	1057550	215
42	75	35	4275-35-801	321676	1057602	215.9
42	75	35	4275-35-802	321620	1057000	214.9
42	75	35	4275-35-803	321578	1056904	216
42	75	35	4275-35-804	321525	1056803	215
42	75	35	4275-35-805	321576	1056702	214.9
42	75	35	4275-35-806	321624	1056701	
42	75	35	4275-35-807	321676	1056698	214
42	75	35	4275-35-808	321727	1056702	216
42	75	35	4275-35-809	321829	1056802	213
42	75	35	4275-35-81	320427	1057652	
42	75	35	4275-35-810	322024	1057604	213.9
42	75	35	4275-35-811	322069	1057254	216
42	75	35	4275-35-812	322071	1057202	211.9
42	75	35	4275-35-813	322877	1058495	296.9
42	75	35	4275-35-814	322874	1058353	274.9
42	75	35	4275-35-815	322776	1058303	254.9
42	75	35	4275-35-816	322824	1058297	275
42	75	35	4275-35-817	322374	1058154	231.7
42	75	35	4275-35-818	322220	1057600	217.9
42	75	35	4275-35-819	322269	1057610	208
42	75	35	4275-35-82	323325	1058755	
42	75	35	4275-35-820	322277	1057548	215.9
42	75	35	4275-35-821	322177	1057554	214
42	75	35	4275-35-822	322278	1057500	210.8
42	75	35	4275-35-823	322229	1057498	216
42	75	35	4275-35-824	322179	1057502	216.7
42	75	35	4275-35-825	322279	1057398	211.9
42	75	35	4275-35-826	322378	1057401	213.9
42	75	35	4275-35-827	322573	1057351	196
42	75	35	4275-35-828	322776	1057355	197
42	75	35	4275-35-829	322875	1057350	215
42	75	35	4275-35-83	323221	1058657	
42	75	35	4275-35-830	322820	1057300	190.9
42	75	35	4275-35-831	322870	1057400	215
42	75	35	4275-35-832	321475	1056801	209.6
42	75	35	4275-35-833	321472	1056903	214
42	75	35	4275-35-834	321675	1057053	210.9

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-835	323272	1058319	274.9
42	75	35	4275-35-836	323223	1058258	271.9
42	75	35	4275-35-837	323224	1058208	274
42	75	35	4275-35-838	323222	1058158	276
42	75	35	4275-35-839	321820	1058150	235
42	75	35	4275-35-84	323322	1058556	
42	75	35	4275-35-840	321427	1057953	215
42	75	35	4275-35-841	321377	1057907	214.5
42	75	35	4275-35-842	321371	1057754	215.9
42	75	35	4275-35-843	321322	1057803	214.9
42	75	35	4275-35-844	322860	1058451	270.9
42	75	35	4275-35-845	322728	1058503	272.8
42	75	35	4275-35-846	322774	1058503	274.7
42	75	35	4275-35-847	322780	1057305	195
42	75	35	4275-35-848	322826	1057251	197
42	75	35	4275-35-849	322875	1057298	215
42	75	35	4275-35-85	323125	1058556	
42	75	35	4275-35-850	322925	1057346	216
42	75	35	4275-35-851	322926	1057497	215
42	75	35	4275-35-852	322873	1057500	217
42	75	35	4275-35-853	322977	1057541	214
42	75	35	4275-35-854	322927	1057596	234
42	75	35	4275-35-855C	322215	1057426	
42	75	35	4275-35-856	320523	1056651	234.9
42	75	35	4275-35-857	322820	1056650	235
42	75	35	4275-35-858	321026	1057051	234.9
42	75	35	4275-35-859	320220	1057048	231.8
42	75	35	4275-35-86	320628	1057851	
42	75	35	4275-35-860	320423	1057047	232
42	75	35	4275-35-861	320324	1057145	227.8
42	75	35	4275-35-862	320125	1056856	234
42	75	35	4275-35-863	324122	1056655	295
42	75	35	4275-35-864	324113	1060453	312
42	75	35	4275-35-865	324923	1060453	314.6
42	75	35	4275-35-866	322281	1057351	213
42	75	35	4275-35-867	322182	1057353	211.9
42	75	35	4275-35-868	322327	1057250	235
42	75	35	4275-35-869	322319	1057048	229
42	75	35	4275-35-87	320827	1057851	
42	75	35	4275-35-870	322523	1057251	232.7
42	75	35	4275-35-871	320121	1056952	237.8
42	75	35	4275-35-872	320126	1056757	199.9
42	75	35	4275-35-873	320415	1056651	232.6
42	75	35	4275-35-874	320626	1056653	232

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-875	320720	1056753	230.9
42	75	35	4275-35-876	320830	1056854	233
42	75	35	4275-35-877	320828	1056948	233.9
42	75	35	4275-35-878	321528	1056602	213.9
42	75	35	4275-35-879	321623	1056602	212.9
42	75	35	4275-35-88	323222	1058454	
42	75	35	4275-35-880	321673	1056601	211.8
42	75	35	4275-35-881	322924	1057294	213.9
42	75	35	4275-35-882	322729	1057308	194.9
42	75	35	4275-35-883	322784	1057257	194.9
42	75	35	4275-35-884	322734	1057260	188.9
42	75	35	4275-35-885	322876	1057247	194
42	75	35	4275-35-886	322929	1057396	215
42	75	35	4275-35-887	322976	1057493	213.9
42	75	35	4275-35-888	322975	1057442	215
42	75	35	4275-35-889	323184	1057486	234.9
42	75	35	4275-35-89	323222	1058599	
42	75	35	4275-35-890	323180	1057701	274.9
42	75	35	4275-35-891	323375	1057898	273.9
42	75	35	4275-35-892	323176	1058802	273.9
42	75	35	4275-35-893	323224	1058805	274.9
42	75	35	4275-35-894	323273	1058854	274.9
42	75	35	4275-35-895	323323	1058805	273.9
42	75	35	4275-35-896	323274	1058806	275
42	75	35	4275-35-897	321378	1057954	208.8
42	75	35	4275-35-898	321329	1057911	214.9
42	75	35	4275-35-899	321370	1057705	209.9
42	75	35	4275-35-9	321327	1058848	
42	75	35	4275-35-90	323813	1058457	
42	75	35	4275-35-900	321331	1057705	215
42	75	35	4275-35-901	320831	1056758	
42	75	35	4275-35-902	320621	1056753	234.9
42	75	35	4275-35-903	320519	1056752	234.8
42	75	35	4275-35-904	320420	1056746	235.9
42	75	35	4275-35-905	320408	1056551	234.2
42	75	35	4275-35-906	320523	1056550	232.9
42	75	35	4275-35-907	320631	1056552	234.9
42	75	35	4275-35-908	322877	1057197	195
42	75	35	4275-35-909	322828	1057201	195
42	75	35	4275-35-91	325327	1060516	
42	75	35	4275-35-910	322779	1057203	194
42	75	35	4275-35-911	322924	1057245	195.9
42	75	35	4275-35-912	320622	1056846	232.8
42	75	35	4275-35-913	320426	1056853	232

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-914	320322	1056944	234.9
42	75	35	4275-35-915	320322	1056748	230
42	75	35	4275-35-916	320224	1056853	235
42	75	35	4275-35-917	321473	1058004	214.9
42	75	35	4275-35-918	321428	1058006	214.6
42	75	35	4275-35-919	321378	1058007	214.5
42	75	35	4275-35-92	325310	1058439	
42	75	35	4275-35-920	321329	1057955	214.9
42	75	35	4275-35-921	321674	1058003	235
42	75	35	4275-35-922	321723	1058003	234.8
42	75	35	4275-35-923	321774	1058049	235
42	75	35	4275-35-924	323222	1058904	272.8
42	75	35	4275-35-925	323174	1058857	273.9
42	75	35	4275-35-926	323325	1058904	275.9
42	75	35	4275-35-927	323273	1058902	273.9
42	75	35	4275-35-928	323375	1058854	276.9
42	75	35	4275-35-929	322970	1057600	235.9
42	75	35	4275-35-93	323323	1058856	
42	75	35	4275-35-930	322978	1057638	236.8
42	75	35	4275-35-931	321420	1056800	216.9
42	75	35	4275-35-932	321421	1056905	211.9
42	75	35	4275-35-933	321469	1056954	215.7
42	75	35	4275-35-934	320874	1056949	236.8
42	75	35	4275-35-935	320776	1056949	236.9
42	75	35	4275-35-936	320729	1056903	236
42	75	35	4275-35-937	320870	1056850	235.8
42	75	35	4275-35-938	320679	1056848	235
42	75	35	4275-35-939	320522	1056848	
42	75	35	4275-35-94	323320	1059254	
42	75	35	4275-35-940	320477	1056847	
42	75	35	4275-35-941	320426	1056900	239
42	75	35	4275-35-942	320321	1056894	
42	75	35	4275-35-943	320322	1056797	
42	75	35	4275-35-944	320120	1056900	239
42	75	35	4275-35-945	320123	1056808	239.8
42	75	35	4275-35-946	320223	1056804	239
42	75	35	4275-35-947	320221	1056898	
42	75	35	4275-35-948	320721	1056702	237.8
42	75	35	4275-35-949	320672	1056653	237.8
42	75	35	4275-35-95	323925	1059455	
42	75	35	4275-35-950	320574	1056655	237.7
42	75	35	4275-35-951	320469	1056653	
42	75	35	4275-35-952	320367	1056646	237
42	75	35	4275-35-953	320354	1056550	239

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-954	320402	1056501	238
42	75	35	4275-35-955	320523	1056501	235.9
42	75	35	4275-35-956	320631	1056501	238
42	75	35	4275-35-957	320684	1056553	239
42	75	35	4275-35-958	322728	1057209	198
42	75	35	4275-35-959	322719	1057156	197
42	75	35	4275-35-96	324518	1059658	
42	75	35	4275-35-960	322768	1057154	197
42	75	35	4275-35-961	322820	1057150	197
42	75	35	4275-35-962	322869	1057150	195
42	75	35	4275-35-963	322917	1057156	213.9
42	75	35	4275-35-964	322916	1057203	215
42	75	35	4275-35-965	323022	1057443	216.9
42	75	35	4275-35-966	323026	1057394	214
42	75	35	4275-35-967	323020	1057600	236.8
42	75	35	4275-35-968	323020	1057650	
42	75	35	4275-35-969	320970	1057000	237
42	75	35	4275-35-97	324520	1060054	
42	75	35	4275-35-970	320920	1057000	236
42	75	35	4275-35-971	320870	1057000	235.9
42	75	35	4275-35-972	320780	1057000	234
42	75	35	4275-35-973	320830	1056901	235
42	75	35	4275-35-974	320826	1056805	240.9
42	75	35	4275-35-975	320775	1056756	240.8
42	75	35	4275-35-976	320679	1056897	236
42	75	35	4275-35-977	320621	1056795	237
42	75	35	4275-35-978	320516	1056799	236
42	75	35	4275-35-979	320469	1056749	229.9
42	75	35	4275-35-98	322924	1058252	
42	75	35	4275-35-980	320420	1056801	241.9
42	75	35	4275-35-981	320372	1056797	230
42	75	35	4275-35-982	320375	1056852	238
42	75	35	4275-35-983	320275	1056853	252.4
42	75	35	4275-35-984	320173	1056805	237.8
42	75	35	4275-35-985	320073	1056809	235.9
42	75	35	4275-35-986	320075	1056859	236.9
42	75	35	4275-35-987	320470	1056707	232.9
42	75	35	4275-35-988	320666	1056705	236.4
42	75	35	4275-35-989	322968	1057153	216.9
42	75	35	4275-35-99	323520	1058857	
42	75	35	4275-35-990	322918	1057109	218
42	75	35	4275-35-991	322965	1057104	216
42	75	35	4275-35-992	322861	1057109	197.9
42	75	35	4275-35-993	322814	1057107	240.9

TWN	RNG	SECT	HOLE NO	EAST COORD	NORTH COORD	TOTAL LOGGED DEPTH
42	75	35	4275-35-994	322764	1057105	188
42	75	35	4275-35-995	322712	1057106	195.9
42	75	35	4275-35-996	322663	1057102	188.9
42	75	35	4275-35-997	322671	1057151	186.9
42	75	35	4275-35-998	322977	1057397	217
42	75	35	4275-35-999	320175	1056754	236
42	75	35	4275-35-KM1	323861	1059568	
42	75	35	4275-35-KM10	322121	1060188	
42	75	35	4275-35-KM11	322026	1060483	
42	75	35	4275-35-KM12	322027	1059891	
42	75	35	4275-35-KM2	322291	1060188	
42	75	35	4275-35-KM3	323757	1057163	
42	75	35	4275-35-KM4	322304	1060477	
42	75	35	4275-35-KM5	322347	1059875	
42	75	35	4275-35-KM6	322014	1060194	
42	75	35	4275-35-KM7	322615	1060200	
42	75	35	4275-35-KM8	321100	1059298	
42	75	35	4275-35-KM9	321907	1060193	
42	75	35	4275-35-MW-1	320102.4	1057971	278.5
42	75	35	4275-35-MW-10	320117.9	1059390	281.3
42	75	35	4275-35-MW-2	322636.5	1057719	201.4
42	75	35	4275-35-MW-5	321453.1	1056691	217.6
42	75	35	4275-35-MW-6	323791.4	1058288	282.1
42	75	35	4275-35-MW-7	322536.9	1056311	198.4
42	75	35	4275-35-OMW-1	320091.8	1057972	179.5
42	75	35	4275-35-OMW-2	322625.8	1057719	100.4
42	75	35	4275-35-PW-1	320194.5	1057997	275.4
42	75	35	4275-35-UMW-1	320113.3	1057971	339.3
42	75	35	4275-35-UMW-2	322645	1057720	280.3

THIS PAGE IS AN OVERSIZED DRAWING OR FIGURE,

THAT CAN BE VIEWED AT THE RECORD TITLED: DRAWING NO.: FIGURE 2.6-13, "MOORE RANCH PROJECT DRILL HOLE MAP"

WITHIN THIS PACKAGE... OR, BY SEARCHING USING THE DOCUMENT/REPORT DRAWING NO. FIGURE 2.6-13

D-01

ADDENDUM 2.6-B

SOIL MAPPING UNIT DESCRIPTIONS and SOILS MAP

THIS PAGE IS AN OVERSIZED DRAWING OR FIGURE,

THAT CAN BE VIEWED AT THE RECORD TITLED: DRAWING NO.: FIGURE 2.6-14, "MOORE RANCH URANIUM PROJECT SOILS MAPPING"

WITHIN THIS PACKAGE... OR, BY SEARCHING USING THE DOCUMENT/REPORT DRAWING NO. FIGURE 2.6-14

D-02

110: Bidman loam, loamy substratum, 0 to 6 percent slopes[1]

The Bidman loam, loamy substratum, map unit consists of very deep, well-drained soils that developed from alluvium derived from calcareous shale. It occurs on alluvial fans and fan remnants at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 45 to 49 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Bidman loam, loamy substratum. Within this map unit the following additional components are found: Bidman loam, Forkwood, Felix ponded, and Ulm. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Bidman loam, loamy substratum soil is slow. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is slow and the hazard of water erosion is slight. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year that production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a poor source for topsoil due to the high clay content of the soil. It is a poor source for roadfill due to the low strength and the shrink-swell capacity. As for reclamation material it is a poor choice for the following reasons: high clay content, low organic matter content, and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

144: Forkwood loam, 0 to 6 percent slopes[1]

The Forkwood loam map unit consists of very deep, well-drained soils that developed from alluvium derived from sandstone and shale. It occurs on alluvial fans and fan remnants at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Forkwood loam. Within this map unit the following additional components are found: Cambria, Ulm, and Wyotite. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Forkwood loam soil is moderate. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is slow and the hazard of water erosion is slight. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green Needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year the production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with the high clay content being the limiting factor. It is a fair choice for roadfill with the low strength being the limiting factor. As for reclamation material it is a fair choice for the following reasons: low organic matter content, the high clay content, and water erosion.

[1]Map unit description based on 2002 South Campbell County NRCS information.

156: Hiland fine sandy loam, 0 to 6 percent slopes[1]

The Hiland fine sandy loam map unit consists of very deep, well-drained soils that developed from alluvium and eolian deposits derived from sandstone and shale. It occurs on alluvial fans and fan remnants at elevations between 4,100 and 5,300 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 85 percent Hiland fine sandy loam. Within this map unit the following additional components are found: Forkwood, Maysdorf, Moskee, and Vonalee. Inclusions comprise approximately 15 percent of the map unit.

Permeability within the Hiland fine sandy loam soil is moderate. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is slow and the hazard of water erosion is slight. The hazard of wind erosion is severe.

Production and Reclamation Potential

There are eight plant species that are common to this map unit. They are as follows: Needleandthread, Prairie sandreed, Indian ricegrass, Little bluestem, Western wheatgrass, Blue grama, and Threadleaf sedge. Silver sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,600 lbs/acre. In a normal year that production is 1,300 lbs/acre. Also in an unfavorable (drought) year the production is approximately 750 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a good source for topsoil, no limitations are found. It is a good source for roadfill as no limitations are found. As for reclamation material it is a fair choice for the following reason, low organic matter content.

[1]Map unit description based on 2002 South Campbell County NRCS information.

226: Ulm loam, 0 to 6 percent slopes[1]

The Ulm loam map unit consists of very deep, well-drained soils that developed from alluvium derived from calcareous shale. It occurs on alluvial fans and fan remnants at elevations between 4,100 and 5,000 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 46 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

It map unit is approximately 85 percent Ulm loam. Within this map unit the following additional components are found: Bidman, and Forkwood. Inclusions comprise approximately 15 percent of the map unit.

Permeability within the Ulm loam soil is slow. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is moderate, and the hazard of water erosion is slight. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year the production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with high clay content being the limiting factor. It is a poor source for roadfill due to the low strength and the shrink-swell capacity. As for reclamation material it is a fair choice for the following reasons: high clay content, low organic matter content, and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

227: Ulm clay loam, 0 to 6 percent slopes[1]

The Ulm clay loam map unit consists of very deep, well-drained soils that developed from alluvium derived from calcareous shale. It occurs on alluvial fans and fan remnants at elevations between 4,100 and 5,000 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 46 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

It map unit is approximately 85 percent Ulm clay loam. Within this map unit the following additional components are found: Bidman, and Forkwood. Inclusions comprise approximately 15 percent of the map unit.

Permeability within the Ulm clay loam soil is slow. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is moderate, and the hazard of water erosion is slight. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are five plant species that are common to this map unit. They are as follows: Green needlegrass, Western wheatgrass, Blue grama, and Skyline bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,400 lbs/acre. In a normal year the production is 1,000 lbs/acre. Also in an unfavorable (drought) year the production is approximately 600 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill and reclamation material. This unit is a poor choice for topsoil due to the high clay content of the soil. It is a poor source for roadfill due to the low strength and the shrink-swell capacity. As for reclamation material it is a poor choice for the following reasons: high clay content, low organic matter content, and water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

235: Vonalee fine sandy loam, 0 to 10 percent slopes[1]

The Vonalee fine sandy loam map unit consists of very deep, well-drained soils that developed from alluvium and eolian deposists derived from calcareous sandstone. It occurs on alluvial fans and fan remnants at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 44 to 49 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Vonalee fine sandy loam. Within this map unit the following additional components are found: Hiland, Keeline, Terro, and areas with 10 to 15 percent slopes. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Vonalee fine sandy loam soil is moderately rapid. The Available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is low and the hazard of water erosion is moderate. The hazard of wind erosion is severe.

Productivity and Reclamation Potential

There are eight plant species that are common to this map unit. They are as follows: Needleandthread, Prairie sandreed, Indian ricegrass, Little bluestem, Western wheatgrass, Blue grama, and Threadleaf sedge. Silver sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,600 lbs/acre. In a normal year the production is 1,300 lbs/acre. Also in an unfavorable (drought) year the production is approximately 750 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a good source for topsoil as no limitations are found. It is a good source for roadfill as no limitations are found. As for reclamation material it is a fair choice for the following reason, low organic matter content.

[1]Map unit description based on 2002 South Campbell County NRCS information.

111-1: Bidman loam, 0 to 6 percent slopes[1]

The Bidman loam, map unit consists of very deep, well-drained soils that developed from alluvium derived from calcareous shale. It occurs on alluvial fans and fan remnants at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 45 to 49 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Bidman loam. Within this map unit the following additional components are found: Cushman, Forkwood, Felix ponded, Parmleed, and Ulm. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Bidman loam, soil is slow. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is slow and the hazard of water erosion is slight. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green Needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year the production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a poor source for topsoil due to the high clay content of the soil. It is a poor source for roadfill due to the low strength and the shrink-swell capacity. As for reclamation material it is a poor choice for the following reasons: high clay content, low organic matter content, and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

111-2: Parmleed loam, 0 to 6 percent slopes[1]

The Parmleed loam map unit consists of moderately deep, well-drained soils that developed from alluvium over residuum weathered from calcareous shale. It occurs on hills and ridges at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 45 to 48 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Parmleed loam. Within this map unit the following additional components are found: Bidman, Cushman, Forkwood, Felix ponded, and Ulm. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Parmleed loam soil is slow. The available water capacity is low. Effective rooting depth is 20 to 40 inches. Surface runoff is slow to moderate and the hazard of water erosion is slight. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year that production is 1,200 pounds. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a poor source for topsoil due to the high clay content of the soil. It is a poor source for roadfill due to the low strength and the shrink-swell capacity. As for reclamation material it is a poor choice for the following reasons: high clay content, depth to bedrock, droughtiness, low organic matter content, and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

112-1: Bidman loam, 6 to 15 percent slopes[1]

The Bidman loam, map unit consists of very deep, well-drained soils that developed from alluvium derived from calcareous shale. It occurs on hills and ridges at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 45 to 49 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Bidman loam. Within this map unit the following additional components are found: Cushman, Forkwood, Parmleed, and Worfka. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Bidman loam, soil is slow. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is slow and the hazard of water erosion is slight. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year that production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a poor source for topsoil due to the high clay content of the soil. It is a poor source for roadfill due to the low strength and the shrink-swell capacity, As for reclamation material it is a poor choice for the following reasons: high clay content and water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

112-2: Parmleed loam, 6 to 15 percent slopes[1]

The Parmleed loam map unit consists of moderately deep, well-drained soils that developed from alluvium over residuum weathered from calcareous shale. It occurs on hills and ridges at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 45 to 48 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Parmleed loam. Within this map unit the following additional components are found: Bidman, Cushman, Forkwood, and Worfka. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Parmleed loam soil is slow. The available water capacity is low. Effective rooting depth is 20 to 40 inches. Surface runoff is slow to moderate and the hazard of water erosion is slight. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year that production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a poor source for topsoil due to the high clay content, slope and depth to bedrock. It is a poor source for roadfill due to the low strength, depth to bedrock, and the shrink-swell capacity. As for reclamation material it is a poor choice for the following reasons: high clay content, droughtiness, depth to bedrock, low organic matter content, and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

116-1: Cambria loam, 0 to 6 percent slopes[1]

The Cambria loam map unit consists of very deep, well-drained soils that developed from alluvium derived from sandstone and shale. It occurs on alluvial fans and fan remnants are elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Cambria loam. Within this map unit the following additional components are found: Cushman, Forkwood, Kishona, poorly drained soils, Ulm and Zigweid. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Cambria loam soil is moderate. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is slow and the hazard of water erosion is slight. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green Needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year that production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a good source for topsoil as no limitations are found. It is a fair source for roadfill due to the low strength and the shrink-swell capacity. As for reclamation material it is a fair choice for the following reasons: low organic matter content and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

116-2: Kishona loam, 0 to 6 percent slopes[1]

The Kishona loam map unit consists of very deep well-drained soils that developed from alluvium derived from sandstone and shale. It occurs on alluvial fans and fan remnants at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Kishona loam. Within this map unit the following additional components are found: Cambria, Cushman, Forkwood, poorly drained soils, Ulm, and Zigweid. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Kishona loam soil is moderate. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is slow and the hazard of water erosion is slight. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green Needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year that production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a good source for topsoil as no limitations are found. It is a poor source for roadfill due to the low strength and the shrink-swell capacity. As for reclamation material it is a fair choice for the following reasons: low organic matter content and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

116-3: Zigweid loam, 0 to 6 percent slopes[1]

The Zigweid loam map unit consists of very deep, well-drained soils that developed from alluvium derived from sandstone and shale. It occurs on alluvial fans and fan remnants at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Zigweid loam. Within this map unit the following additional components are found: Cambria, Cushman, Forkwood, Kishona, poorly drained soils, and Ulm. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Zigweid loam soil is moderate. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is slow and the hazard of water erosion is slight. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green Needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year that production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a good source for topsoil as no limitations are found. It is a poor source for roadfill due to the low strength and the shrink-swell capacity. As for reclamation material it is a fair choice for the following reasons: low organic matter content and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

117-1: Cambria loam, 6 to 15 percent slopes[1]

The Cambria loam map unit consists of very deep, well-drained soils that developed from alluvium derived from sandstone and shale. It occurs on hills and ridges at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Cambria loam. Within this map unit the following additional components are found: Cushman, Forkwood, Kishona, Theedle and Zigweid. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Cambria loam soil is moderate. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is slow and the hazard of water erosion is slight. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green Needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year that production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with slope being the limiting factor. It is a fair source for roadfill due to the low strength and the shrink-swell capacity. As for reclamation material it is a fair choice for the following reasons: low organic matter content and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

117-2: Kishona loam, 6 to 20 percent slopes

The Kishona loam map unit consists of very deep well-drained soils that developed from alluvium derived from sandstone and shale. It occurs on stream terraces at elevations between 4,100 and 5,000 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Kishona loam. Within this map unit the following additional components are found: Cambria, Cushman, Forkwood, Theedle, and Zigweid. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Kishona association soil is moderate. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is moderate and the hazard of water erosion is severe. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year that production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with slope being the limiting factor. It is a poor source for roadfill due to the low strength and the shrink-swell capacity. As for reclamation material it is a fair choice for the following reasons: low organic matter content, and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

122-1: Cushman loam, 6 to 15 percent slopes[1]

The Cushman loam map unit consists of moderately deep, well-drained soils that developed from alluvium over residuum weathered from sandstone and shale. It occurs on hills and ridges at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43to 51egrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Cushman loam. Within this map unit the following additional components are found: Bowbac, Cambria, Forkwood, Worf, and Zigweid. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Cushman loam soil is moderate. The available water capacity is moderate. Effective rooting depth is 20 to 40 inches. Surface runoff is moderate and the hazard of water erosion is severe. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green Needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year that production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with slope and depth to bedrock being the limiting factors. It is a poor source for roadfill due to the low strength, depth to bedrock, and the shrink-swell capacity. As for reclamation material it is a fair choice for the following reasons: depth to bedrock, droughtiness, low organic matter content, and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

124-1: Cushman loam, 6 to 15 percent slopes[1]

The Cushman loam map unit consists of moderately deep, well-drained soils that developed from alluvium over residuum weathered from sandstone and shale. It occurs on hills and ridges at elevations between 4,100 and 5,400 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43to 51egrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Cushman loam. Within this map unit the following additional components are found: Areas with 3 to 6 percent slopes, Cambria, Renohill, Samday, Shingle, Theedle, and Worf. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Cushman loam soil is moderate. The available water capacity is moderate. Effective rooting depth is 20 to 40 inches. Surface runoff is moderate and the hazard of water erosion is severe. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green Needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year that production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with depth to bedrock and slope being the limiting factors. It is a poor source for roadfill due to the low strength, depth to bedrock, and the shrink-swell capacity. As for reclamation material it is a fair choice for the following reasons: depth to bedrock, droughtiness, low organic matter content, and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

124-2: Shingle loam, 3 to 30 percent slopes[1]

The Shingle loam map unit consists of shallow, well-drained soils that developed from residuum weathered from sandstone and shale. It occurs on hills and ridges at elevations between 4,100 and 5,400 feet

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Shingle loam. Within this map unit the following additional components are found: Areas with 3 to 6 percent slopes, Cambria, Cushman, Renohill, Samday, Theedle, and Worf. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Shingle loam soil is moderate. The available water capacity is very low. Effective rooting depth is 10 to 20 inches. Surface runoff is very high and the hazard of water erosion is severe. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are eight plant species that are common to this map unit. They are as follows: Bluebunch wheatgrass, Western wheatgrass, Blue grama, Little bluestem, Needleandthread, Threadleaf sedge, and Green needlegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,200 lbs/acre. In a normal year that production is 900 lbs/acre. Also in an unfavorable (drought) year the production is approximately 450 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with depth to bedrock and slope being the limiting factors. It is a poor source for roadfill due to the low strength, depth to bedrock, and the shrink-swell capacity. As for reclamation material it is a poor choice for the following reasons: droughtiness, depth to bedrock, low organic matter content, and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

127-2: Theedle loam, 0 to 30 percent slopes[1]

The Theedle map unit consists of moderately deep, well-drained soils that developed from alluvium over residuum weathered from sandstone and shale. If occurs on hills and ridges at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 45 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Theedle loam. Within this map unit the following additional components are found: Cambria, Cushman, Kishona, and Shingle. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Theedle loam soil is moderate. The available water capacity is low. Effective rooting depth is 20 to 40 inches. Surface runoff is high and the hazard of water erosion is severe. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are eight plant species that are common to this map unit. They are as follows: Needleandthread, Prairie sandreed, Indian ricegrass, Little bluestem, Western wheatgrass, Blue grama, and Threadleaf sedge. Silver sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year that production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with depth to bedrock and slope being the limiting factors. It is a poor source for roadfill due to the low strength, depth to bedrock, and the shrink-swell capacity. As for reclamation material it is a fair choice for the following reasons: depth to bedrock, droughtiness, low organic matter content, and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

140-1: Embry sandy loam, 3 to 20 percent slopes[1]

The Embry sandy loam map unit consists of very deep, well-drained soils that developed from alluvium and eolian deposits derived from sandstone. It occurs on hills and ridges at elevations between 4,200 and 5,000 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 45 to 50 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Embry sandy loam. Within this map unit the following additional components are found: Julesburg, Shingle, Taluce, and Turnercrest. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Embry sandy loam soil is moderately rapid. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is slow and the hazard of water erosion is moderate. The hazard of wind erosion is severe.

Productivity and Reclamation Potential

There are eight plant species that are common to this map unit. They are as follows: Needleandthread, Prairie sandreed, Indian ricegrass, Little bluestem, Western wheatgrass, Blue grama, and Threadleaf sedge. Silver sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,600 lbs/acre. In a normal year that production is 1,300 lbs/acre. Also in an unfavorable (drought) year the production is approximately 750 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with slope being the limiting factor. It is a good source for roadfill as no limitations are found. As for reclamation material it is a fair choice for the following reasons, low organic matter content.

[1]Map unit description based on 2002 South Campbell County NRCS information.

146-2: Cushman loam, 0 to 6 percent slopes[1]

The Cushman loam map unit consists of moderately deep, well-drained soils that developed from alluvium over residuum weathered from sandstone and shale. It occurs on hills and ridges at elevations between 4,100 and 5,200 feet

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Cushman loam. Within this map unit the following additional components are found: Bowbac, Cambria, Forkwood, frequently ponded loamy soils, frequently ponded clayey soils, Hiland, and Theedle. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Cushman loam soil is moderate. The available water capacity is moderate. Effective rooting depth is 20 to 40 inches. Surface runoff is moderate and the hazard of water erosion is severe. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green Needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year that production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with depth to bedrock being the limiting factor. It is a poor source for roadfill due to the low strength, depth to bedrock, and the shrink-swell capacity. As for reclamation material it is a fair choice for the following reasons: droughtiness, depth to bedrock, low organic matter content, and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

147-1: Forkwood loam, 6 to 15 percent slopes[1]

The Forkwood loam map unit consists of very deep. Well-drained soils that developed from alluvium derived from sandstone and shale. It occurs on hills and ridges at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Forkwood loam. Within this map unit the following additional components are found: Cambria, Cushman, Theedle, Ulm, and Zigweid. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Forkwood loam map unit is moderate. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is slow, and the hazard of water erosion is slight. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year that production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with the high clay content and slope being the limiting factors. It is a fair source for roadfill due to the low strength. As for reclamation material it is a fair choice for the following reasons: high clay content, low organic matter content, and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

153-1: Haverdad clay loam, 0 to 6 percent slopes[1]

The Haverdad association map unit consists of very deep, well-drained soils that developed from alluvium derived from sandstone and shale. If occurs on flood plains and stream terraces at elevations between 4,100 and 5,000 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 52 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Haverdad association. Within this map unit the following additional components are found: Boruff, Clarkelen, Keeline and Kishona. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Haverdad association soil is moderate. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is slow and the hazard of water erosion is slight. The hazard of wind erosion is moderate.

Note: This soil is subject to rare to occasional flooding for very brief periods during prolonged, high intensity storms from April through July.

Productivity and Reclamation Potential

There are seven plant species that are common to this map unit. They are as follows: Green needlegrass, Needleandthread, Slender wheatgrass, Western wheatgrass, and Sandberg bluegrass. Snowberry is the only shrub specie found within this unit. Cottonwood is the only tree specie found within this unit.

In a favorable year (above average moisture) the production is approximately 3,000 lbs/acre. In a normal year that production is 2,300 lbs/acre. Also in an unfavorable (drought) year the production is approximately 1,600 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a good source for topsoil as no limitations are found. It is a poor source for roadfill due to the low strength and the shrink-swell capacity. As for reclamation material it is a fair choice for the following reasons: low organic matter content, and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

153-2: Kishona association, 0 to 6 percent slopes[1]

The Kishona association map unit consists of very deep well-drained soils that developed from alluvium derived from sandstone and shale. It occurs on stream terraces at elevations between 4,100 and 5,000 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Kishona association. Within this map unit the following additional components are found: Boruff, Clarkelen, Haverdad, and Keeline. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Kishona association soil is moderate. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is slow and the hazard of water erosion is slight. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year that production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a good source for topsoil as no limitations are found. It is a poor source for roadfill due to the low strength and the shrink-swell capacity. As for reclamation material it is a fair choice for the following reasons: low organic matter content, and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

157-2: Bowbac fine sandy loam, 0 to 6 percent slopes[1]

The Bowbac fine sandy loam map unit consists of moderately deep, well-drained soils that developed from alluvium and eolian deposits over residuum weathered from calcareous sandstone. It occurs on hills and ridges at elevations between 4,100 and 5,300 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Bowbac fine sandy loam. Within this map unit the following additional components are found: Cushman, Forkwood, Hiland, Terro, and Vonalee. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Bowbac fine sandy loam soil is moderate. The available water capacity is moderate. Effective rooting depth is 20 to 40 inches. Surface runoff is slow and the hazard of water erosion is slight. The hazard of wind erosion is severe.

Productivity and Reclamation Potential

There are eight plant species that are common to this map unit. They are as follows: Needleandthread, Prairie sandreed, Indian ricegrass, Little bluestem, Western wheatgrass, Blue grama, and Threadleaf sedge. Silver sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,600 lbs/acre. In a normal year that production is 1,300 lbs/acre. Also in an unfavorable (drought) year the production is approximately 750 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with depth to bedrock and the high clay content being the limiting factors. It is a poor source for roadfill due to the low strength, depth to bedrock, and the shrink-swell capacity. As for reclamation material it is a fair choice for the following reasons: low organic matter content, high clay content, droughtiness, and depth to bedrock.

[1]Map unit description based on 2002 South Campbell County NRCS information.

158-1: Hiland fine sandy loam, 6 to 15 percent slopes[1]

The Hiland fine sandy loam map consists of very deep, well-drained soils that developed from alluvium and eolian deposits derived from sandstone and shale. It occurs on hills, ridges, backslopes, and footslopes at elevations between 4,100 and 5,300 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Hiland fine sandy loam. Within this map unit the following additional components are found: Bowbac, Decolney, Maysdorf, Terro, Vonalee, and Worf. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Hiland fine sandy loam soil is moderate. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is slow and the hazard of water erosion is slight. The hazard of wind erosion is severe.

Productivity and Reclamation Potential

There are eight plant species that are common to this map unit. They are as follows: Needleandthread, Prairie sandreed, Indian ricegrass, Little bluestem, Western wheatgrass, Blue grama, and Threadleaf sedge. Silver sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,600 lbs/acre. In a normal year that production is 1,300 lbs/acre. Also in an unfavorable (drought) year the production is approximately 750 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with slope and the high clay content being the limiting factors. It is a good source for roadfill as no limitations are found. As for reclamation material it is a fair choice for the following reasons: high clay content, and low organic matter content.

[1]Map unit description based on 2002 South Campbell County NRCS information.

158-2: Bowbac fine sandy loam, 6 to 15 percent slopes[1]

The Bowbac fine sandy loam map unit consists of moderately deep, well-drained soils that developed from alluvium and eolian deposits over residuum weathered from calcareous sandstone. It occurs on hills, ridges, summits, and shoulders at elevations between 4,100 and 5,300 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Bowbac fine sandy loam. Within this map unit the following additional components are found: Decolney, Hiland, Maysdorf, Terro, Vonalee, and Worf. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Bowbac fine sandy loam soil is moderate. The available water capacity is moderate. Effective rooting depth is 20 to 40 inches. Surface runoff is slow and the hazard of water erosion is slight. The hazard of wind erosion is severe.

Productivity and Reclamation Potential

There are eight plant species that are common to this map unit. They are as follows: Needleandthread, Prairie sandreed, Indian ricegrass, Little bluestem, Western wheatgrass, Blue grama, and Threadleaf sedge. Silver sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,600 lbs/acre. In a normal year that production is 1,300 lbs/acre. Also in an unfavorable (drought) year the production is approximately 750 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with slope, the high clay content, and depth to bedrock being the limiting factors. It is a poor source for roadfill due to the low strength, depth to bedrock, and the shrink-swell capacity. As for reclamation material it is a poor choice for the following reasons: high clay content, low organic matter content, depth to bedrock, and droughtiness.

[1]Map unit description based on 2002 South Campbell County NRCS information.

170-2: Tullock loamy sand, 6 to 30 percent slopes[1]

The Tullock loamy sands map unit consists of moderately deep, excessively-drained soils that developed from alluvium and eolian deposits over residuum weathered from calcareous sandstone. It occurs on hills, ridges, summits, and shoulders at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 47 to 53 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Tullock loamy sands. Within this map unit the following additional components are found: Badlands, Blowouts, Keeline, Orpha, Taluce, Terro, and Vonalee. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Tullock loamy sands soil is rapid. The available water capacity is very low. Effective rooting depth is 20 to 40 inches. Surface runoff is very low and the hazard of water erosion is slight. The hazard of wind erosion is severe.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Prairie sandreed, Sand bluestem, Indian ricegrass, and Threadleaf sedge. Silver sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,700 lbs/acre. In a normal year that production is 1,400 lbs/acre. Also in an unfavorable (drought) year the production is approximately 900 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a poor source for topsoil with the high sand content, slope, and depth to bedrock being the limiting factors. It is a poor source for roadfill with depth to bedrock being the limiting factor. As for reclamation material it is a poor choice for the following reasons: high sand content, the wind erosion potential, low organic matter content, droughtiness, and depth to bedrock.

[1]Map unit description based on 2002 South Campbell County NRCS information.

171-1: Keeline, dry complex, 3 to 30 percent slopes[1]

The Keeline dry complex map unit consists of very deep, somewhat excessively drained soils that developed from alluvium and eolian deposits derived from calcareous sandstone. It occurs on hills, ridges, backslopes and footslopes at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 44 to 49 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Keeline, dry complex. Within this map unit the following additional components are found: Badland, Blowout, Niobrara, Orpha, Tullock, and Turnercrest. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Keeline, dry complex soil is moderately rapid. The available water capacity is moderate. Effective rooting depth is 60 inches or more. Surface runoff is slow and the hazard of water erosion is moderate. The hazard of wind erosion is severe.

Productivity and Reclamation Potential

There are eight plant species that are common to this map unit. They are as follows: Needleandthread, Prairie sandreed, Indian ricegrass, Little bluestem, Western wheatgrass, Blue grama, and Threadleaf sedge. Silver sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,600 lbs/acre. In a normal year that production is 1,300 lbs/acre. Also in an unfavorable (drought) year the production is approximately 750 lbs/acre.

There are three areas that are considered for reclamation; topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with slope being the limiting factor. It is a good source for roadfill as no limitations are found. As for reclamation material it is a fair choice for the following reason, low organic matter content.

[1]Map unit description based on 2002 South Campbell County NRCS information.

194-1: Pugsley sandy loams, 6 to 15 percent slopes[1]

The Pugsley sandy loams map unit consists of moderately deep, well-drained souls that developed from alluvium over residuum weathered from calcareous sandstone. It occurs on hills, ridges, summits, and shoulders at elevations between 4,100 and 5,000 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 46 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Pugsley sandy loams. Within this map unit the following additional components are found: Bowbac, Decolney, Hiland, and Worf. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Pugsley sandy loams soil is moderate. The available water capacity is very low. Effective rooting depth is 20 to 40 inches. Surface runoff is moderate, and the hazard of water erosion is severe. The hazard of wind erosion is severe.

Productivity and Reclamation Potential

There are eight plant species that are common to this map unit. They are as follows: Needleandthread, Prairie sandreed, Indian ricegrass, Little bluestem, Western wheatgrass, Blue grama, and Threadleaf sedge. Silver sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,600 lbs/acre. In a normal year that production is 1,300 lbs/acre. Also in an unfavorable (drought) year the production is approximately 750 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with depth to bedrock and slope being the limiting factors. It is a poor source for roadfill due to the depth to bedrock. As for reclamation material it is a fair choice for the following reasons: droughtiness, depth to bedrock, and low organic matter content.

[1]Map unit description based on 2002 South Campbell County NRCS information.

194-2: Decolney sandy loams, 6 to 15 percent slopes[1]

The Decolney sandy loams map unit consists of very deep, well-drained soils that developed from alluvium and eolian deposits derived from sandstone and shale. It occurs on hills, ridges, backslopes, and footslopes at elevations between 4,100 and 5,000 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 44 to 49 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Decolney sandy loams. Within this map unit the following additional components are found: Bowbac, Hiland, Pugsley, and Worf. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Decolney sandy loams soil is moderate. The available water capacity is high. Effective rooting depth is 60 inches or more. Surface runoff is moderate and the hazard of water erosion is severe. The hazard of wind erosion is severe.

Productivity and Reclamation Potential

There are eight plant species that are common to this map unit. They are as follows: Needleandthread, Prairie sandreed, Indian ricegrass, Little bluestem, Western wheatgrass, Blue grama, and Threadleaf sedge. Silver sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,600 lbs/acre. In a normal year that production is 1,300 lbs/acre. Also in an unfavorable (drought) year the production is approximately 750 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with slope being the limiting factor. It is a good source for roadfill as no limitations are found. As for reclamation material it is a fair choice for the following reason, low organic matter content.

[1]Map unit description based on 2002 South Campbell County NRCS information.

205-1: Samday clay loam, 3 to 15 percent slopes[1]
(Former Samsil series)

The Samday clay loam map unit consists of shallow, well-drained soils that developed from residuum weathered from calcareous shale. It occurs on hills, ridges, summits, and shoulders at elevations between 4,100 and 5,000 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 44 to 49 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Samday clay loam. Within this map unit the following additional components are found: Heldt, Hilight, Savageton, Theedle, and Worfka. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Samday clay loam soil is slow. The available water capacity is very low. Effective rooting depth is 10 to 20 inches. Surface runoff is very high and the hazard of water erosion is severe. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are five plant species that are common to this map unit. They are as follows: Western wheatgrass, Blue grama, Green needlegrass, and Bluebunch wheatgrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,000 lbs/acre. In a normal year that production is 750 lbs/acre. Also in an unfavorable (drought) year the production is approximately 450 lbs/acre.

There are three areas that are considered for reclamation; topsoil, roadfill, and reclamation material. This unit is a poor source for topsoil with depth to bedrock, slope and the high clay content being the limiting factors. It is a poor source for roadfill due to the low strength, depth to bedrock, and the shrink-swell capacity. As for reclamation material it is a poor choice for the following reasons: droughtiness, depth to bedrock, low organic matter content, high clay content, and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

213-1: Terro sandy loam, 6 to 30 percent slopes[1]

The Terro sandy loam map unit consists of moderately deep, well-drained soils that developed from alluvium over residuum derived from calcareous sandstone. It occurs on hills, ridges, backslopes, and summits at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 47 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Terro sandy loam. Within this map unit the following additional components are found: Keeline, Orpha, Taluce, Turnercrest, Vonalee, and Badlands. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Terro sandy loam soil is moderately rapid. The available water capacity is very low. Effective rooting depth is 20 to 40 inches. Surface runoff is slow and the hazard of water erosion is severe. The hazard of wind erosion is severe.

Productivity and Reclamation Potential

There are eight plant species that are common to this map unit. They are as follows: Needleandthread, Prairie sandreed, Indian ricegrass, Little bluestem, Western wheatgrass, Blue grama, and Threadleaf sedge. Silver sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,600 lbs/acre. In a normal year the production is 1,300 lbs/acre. Also in an unfavorable (drought) year the production is approximately 750 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a poor source for topsoil with slope and depth to bedrock being the limiting factors. It is a poor source for roadfill due to the depth to bedrock and slope. As for reclamation material it is a fair choice for the following reasons: droughtiness, depth to bedrock, and low organic matter content.

[1]Map unit description based on 2002 South Campbell County NRCS information.

216-2: Kishona loam, 3 to 30 percent slopes[1]

The Kishona loam map unit consists of very deep well-drained soils that developed from alluvium derived from sandstone and shale. It occurs on hills, ridges, fan remnants, backslopes, and footslopes at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Kishona loam. Within this map unit the following additional components are found: Cambria, Hilight, Shingle, Taluce, Theedle, and Turnercrest. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Kishona loam soil is moderate. The available water capacity is moderate. Effective rooting depth is 60 inches or more. Surface runoff is moderate and the hazard of water erosion is severe. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Western wheatgrass, Blue grama, Green needlegrass, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,500 lbs/acre. In a normal year that production is 1,200 lbs/acre. Also in an unfavorable (drought) year the production is approximately 700 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with slope being the limiting factor. It is a poor source for roadfill due to the low strength, depth to bedrock, slope and the shrink-swell capacity. As for reclamation material it is a fair choice for the following reasons: low organic matter content, and the water erosion potential.

[1]Map unit description based on 2002 South Campbell County NRCS information.

221-1: Turnercrest fine sandy loam, 6 to 30 percent slopes[1]

The Turnercrest fine sandy loam map unit consists of moderately deep, well-drained soil that developed from alluvium and eolian deposits over residuum weathered from calcareous sandstone. It occurs on hills, ridges, summits, and shoulders at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 45 to 53 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Turnercrest fine sandy loam. Within this map unit the following additional components are found: Keeline, Orpha, Taluce, Terro, Tullock, and Vonalee. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Turnercrest fine sandy loam soil is moderately rapid. The available water capacity is very low. Effective rooting depth is 20 to 40 inches. Surface runoff is moderate and the hazard of water erosion is severe. The hazard of wind erosion is severe.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Prairie sandreed, Western wheatgrass, Little bluestem, and Threadleaf sedge. Silver sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,600 lbs/acre. In a normal year that production is 1,300 lbs/acre. Also in an unfavorable (drought) year the production is approximately 750 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a poor source for topsoil with slope and depth to bedrock being the limiting factors. It is a poor source for roadfill due to the depth to bedrock. As for reclamation material it is a fair choice for the following reasons: low organic matter content, droughtiness, and depth to bedrock.

[1]Map unit description based on 2002 South Campbell County NRCS information.

221-3: Taluce fine sandy loam, 6 to 30 percent slopes[1]

The Taluce fine sandy loam map unit consists of shallow, well-drained soils that developed from residuum weathered from calcareous sandstone. It occurs on hills, ridges, summits and shoulders at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 42 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Taluce fine sandy loam. Within this map unit the following additional components are found: Keeline, Orpha, Terro, Tullock, Turnercrest, and Vonalee. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Taluce fine sandy loam soil is rapid. The available water capacity is very low. Effective rooting depth is 10 to 20 inches. Surface runoff is very rapid and the hazard of water erosion is severe. The hazard of wind erosion is severe.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit. They are as follows: Needleandthread, Prairie sandreed, Bluebunch wheatgrass, Little bluestem, Blue grama, and Threadleaf sedge.

In a favorable year (above average moisture) the production is approximately 1,300 lbs/acre. In a normal year that production is 1,000 lbs/acre. Also in an unfavorable (drought) year the production is approximately 600 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a poor source for topsoil with slope and depth to bedrock being the limiting factors. It is a poor source for roadfill due to the depth to bedrock, and slope. As for reclamation material it is a poor choice for the following reasons: low organic matter content, droughtiness, and depth to bedrock.

[1]Map unit description based on 2002 South Campbell County NRCS information.

228-2: Renohill clay loam 0 to 6 percent slopes[1]

The Renohill clay loam map unit consists of moderately deep, well-drained soils that developed from alluvium over residuum weathered from calcareous shale. It occurs on summits and shoulders at elevations between 4,100 and 5,200 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 43 to 47 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Renohill clay loam. Within this map unit the following additional components are found: Bidman, Parmleed, Savageton, and Ulm. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Renohill clay loam soil is moderately slow. The available water capacity is moderate. Effective rooting depth is 20 to 40 inches. Surface runoff is moderate and the hazard of water erosion is moderate. The hazard of wind erosion is moderate.

Productivity and Reclamation Potential

There are four plant species that are common to this map unit. They are as follows: Green needlegrass, Western wheatgrass, Blue grama, and Cusick's bluegrass. Big sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,400 lbs/acre. In a normal year that production is 1,000 lbs/acre. Also in an unfavorable (drought) year the production is approximately 600 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a poor source for topsoil with the high clay content, and depth to bedrock being the limiting factors. It is a poor source for roadfill due to the low strength, shrink swell, and depth to bedrock. As for reclamation material it is a poor choice for the following reasons: high clay content, low organic matter content, depth to bedrock, and water erosion.

[1]Map unit description based on 2002 South Campbell County NRCS information.

236-2: Terro fine sandy loam, 2 to 10 percent slopes[1]

The Terro sandy loam map unit consists of moderately deep, well-drained soils that developed from alluvium over residuum derived from calcareous sandstone. It occurs on hills, ridges, shoulders, and summits at elevations between 4,100 and 5,000 feet.

The average annual precipitation ranges from 10 to 14 inches. The average annual air temperature is approximately 47 to 51 degrees F., and the average frost-free season is approximately 105 to 130 days.

This map unit is approximately 80 percent Terro sandy loam. Within this map unit the following additional components are found: Bowbac, Orpha, Taluce, Tullock, Vonalee, and areas with 10 to 15 percent slopes. Inclusions comprise approximately 20 percent of the map unit.

Permeability within the Terro sandy loam soil is moderately rapid. The available water capacity is low. Effective rooting depth is 20 to 40 inches. Surface runoff is slow and the hazard of water erosion is moderate. The hazard of wind erosion is severe.

Productivity and Reclamation Potential

There are seven plant species that are common to this map unit. They are as follows: Needleandthread, Prairie sandreed, Indian ricegrass, Little bluestem, Western wheatgrass, and Threadleaf sedge. Silver sagebrush is the only shrub specie found within this unit.

In a favorable year (above average moisture) the production is approximately 1,600 lbs/acre. In a normal year that production is 1,300 lbs/acre. Also in an unfavorable (drought) year the production is approximately 750 lbs/acre.

There are three areas that are considered for reclamation: topsoil, roadfill, and reclamation material. This unit is a fair source for topsoil with depth to bedrock being the limiting factor. It is a poor source for roadfill due to the depth to bedrock. As for reclamation material it is a fair choice for the following reasons: low organic matter content, droughtiness, and depth to bedrock.

[1]Map unit description based on 2002 South Campbell County NRCS information.

ADDENDUM 2.6-C

SAMPLED SOIL SERIES DESCRIPTIONS

HILAND SERIES

SOIL MAPPING UNIT: 156 Hiland fine sandy loam, 0 to 6 percent slopes
SOIL SAMPLE LOCATION: 14-1
TYPICAL PEDON: Hiland silty loam on flat area utilized as rangeland

TAXONOMIC CLASS: Fine-loamy, mixed, superactive, mesic Ustic Haplargids

A--0 to 5 inches; silty loam, non effervescent, very slightly acidic (pH 6.8)

Bt1--5 to 16 inches; loam, non effervescent, slightly acidic (pH 6.5)

Bt2--16 to 31 inches; clay loam; non effervescent, very slightly acidic (pH 6.8)

Bt3--31 to 42 inches; sandy clay loam, non effervescent, very slightly alkaline (pH 7.2)

Btk --42 to 51 inches, sandy clay loam, strongly effervescent, moderately alkaline (pH 8.1)

Ck -- 51 to 60 inches; sandy clay loam, strongly effervescent, moderately alkaline (pH 8.2)

TYPE LOCATION: Campbell County, Wyoming; refer to waypoint 14-1 on map included in this report.

RANGE IN CHARACTERISTICS (according to official series description): Gravel ranges from 0 to 15 percent in the solum and from 0 to 30 percent in the 2C or Bk horizons. The base of the Bt or Btk ranges from 15 to 35 inches. Depth to continuous carbonate accumulation ranges from 14 to 32 inches. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F. and is never moist in all parts for as long as 60 consecutive days when the soil temperature at a depth of 20 inches is 41 degrees F., which occurs about April 21-27, but is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for at least 90 cumulative days during this period. The mean annual soil temperature is 47 to 52 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or more for 175 to 192 days. EC ranges from 0 to 2 mmhos from the surface to the base of the Bt and from 1 to 4 mmhos below the base of the Bt. Bedrock is deeper than 60 inches.

SUITABILITY FOR TOPSOIL (according to WDEQ Guideline 1, 1994):

No unsuitable or marginal values were present. Estimated stripping depth is 60 inches.

GEOGRAPHIC SETTING (according to official series description): Hiland soils are on

relict surfaces consisting of terraces, fan remnants, pediments, fans, ridges, hills and stabilized dunes. Slopes are 0 to 20 percent. They formed in moderately coarse alluvium and eolian material derived predominantly from sandstone. Elevations are 3,500 to 6,300 feet. The average annual precipitation is about 12 inches with over half of the annual precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September, and October. Precipitation ranges from 10 to 14 inches. The mean annual air temperature is 43 to 51 degrees F. The frost-free season is 105 to 130 days.

HILAND SERIES

SOIL MAPPING UNIT: Hiland fine sandy loam, 0 to 6 percent slopes
SOIL SAMPLE LOCATION: 19-1
TYPICAL PEDON: Hiland loam on northeast facing slope of 3 percent; utilized as rangeland

TAXONOMIC CLASS: Fine-loamy, mixed, superactive, mesic Ustic Haplargids

A--0 to 3 inches; loam, non effervescent, slightly acidic (pH 6.2)

Bt--3 to 20 inches; silty loam, non effervescent, very slightly acidic (pH 7.1)

Btk--20 to 24 inches; silty loam; strongly effervescent, slightly alkaline (pH 7.6)

C1k--24 to 32 inches; clay, strongly effervescent, moderately alkaline (pH 8.2)

C2k --32 to 44 inches, clay-clay loam, strongly effervescent, moderately alkaline (pH 8.2)

C3k -- 44 to 60 inches; clay loam, strongly effervescent, slightly alkaline (pH 7.9)

TYPE LOCATION: Campbell County, Wyoming; refer to waypoint 19-1 on map included in this report.

RANGE IN CHARACTERISTICS (according to official series description): Gravel ranges from 0 to 15 percent in the solum and from 0 to 30 percent in the 2C or Bk horizons. The base of the Bt or Btk ranges from 15 to 35 inches. Depth to continuous carbonate accumulation ranges from 14 to 32 inches. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F. and is never moist in all parts for as long as 60 consecutive days when the soil temperature at a depth of 20 inches is 41 degrees F., which occurs about April 21-27, but is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for at least 90 cumulative days during this period. The mean annual soil temperature is 47 to 52 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or more for 175 to 192 days. EC ranges from 0 to 2 mmhos from the surface to the base of the Bt and from 1 to 4 mmhos below the base of the Bt. Bedrock is deeper than 60 inches.

SUITABILITY FOR TOPSOIL (according to WDEQ Guideline 1, 1994):

Marginal texture (clay) was found at a depth of 24 to 44 inches. Marginal selenium and SAR values were found at 44 to 60 inches. Estimated stripping depth is 44 inches.

GEOGRAPHIC SETTING (according to official series description): Hiland soils are on relict surfaces consisting of terraces, fan remnants, pediments, fans, ridges, hills and stabilized

dunes. Slopes are 0 to 20 percent. They formed in moderately coarse alluvium and eolian material derived predominantly from sandstone. Elevations are 3,500 to 6,300 feet. The average annual precipitation is about 12 inches with over half of the annual precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September, and October. Precipitation ranges from 10 to 14 inches. The mean annual air temperature is 43 to 51 degrees F. The frost-free season is 105 to 130 days.

KEELINE SERIES

SOIL MAPPING UNIT: 171-1 Keeline, dry complex
SOIL SAMPLE LOCATION: 33-1
TYPICAL PEDON: Keeline sandy loam on east facing midslope of 4 percent utilized as rangeland

TAXONOMIC CLASS: Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents

A--0 to 3 inches; sandy loam, non effervescent; slightly acidic (pH 6.4)

AC--3 to 15 inches; sandy loam, non effervescent; slightly acidic (pH 6.5)

C1--15 to 34 inches; sandy clay loam, non effervescent, neutral (pH 7.0)

C2k—34 to 44 inches; sandy clay loam, non effervescent, very slightly alkaline (pH 7.1)

C2k--44 to 60 inches; sandy clay loam, strongly effervescent, slightly alkaline (pH 7.8)

TYPE LOCATION: Campbell County, Wyoming; refer to waypoint 33-1 on map included in this report.

RANGE IN CHARACTERISTICS: Free carbonates typically occur throughout the profile, but some pedons may be leached as much as 6 inches. The control section averages fine sandy loam or sandy loam with 5 to 18 percent clay. Rock fragments range from 0 to 15 percent. Some thin strata of coarser material may occur. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F., which occurs about April 21-27, and is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for at least 90 cumulative days during this period. The mean annual soil temperature is 47 to 52 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or more for 175 to 192 days. EC ranges from 0 to 4 mmhos throughout the profile. Bedrock is deeper than 60 inches.

SUITABILITY FOR TOPSOIL (according to WDEQ Guideline 1, 1994):

No marginal or unsuitable values were present. Estimated stripping depth is 60 inches.

GEOGRAPHIC SETTING: Keeline soils are on terraces, benches, alluvial fans, fan remnants, ridgetop and hillslope positions. Slopes are 0 to 40 percent. These soils formed in moderately

coarse alluvium or eolian deposits derived from calcareous sandstone. Elevations are 3,500 to 6,200 feet. The average annual precipitation is 12 inches with over one-half of the annual precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September, and October. Precipitation ranges from 10 to 15 inches. The mean annual temperature is about 46 degrees F. but ranges from 44 to 49 degrees F. The frost-free season is about 105 to 130 days.

CUSHMAN SERIES

SOIL MAPPING UNIT: 146-2 Cushman loam, 0 to 6 percent slopes
SOIL SAMPLE LOCATION: 36-1
TYPICAL PEDON: Cushman sandy clay loam on south facing slope of about 3 percent under native grass vegetation

TAXONOMIC CLASS: Fine-loamy, mixed, superactive, mesic Ustic Haplargids

A-- 0 to 3 inches; sandy clay loam, moist, moderate medium granular structure; soft, friable, slightly sticky and slightly plastic, common very fine, and fine, and few medium roots; slightly acidic (pH 6.2); clear smooth boundary

Bt--3 to 12 inches, clay, moist, weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, moderately sticky and moderately plastic, common very fine, fine and few medium roots; few faint clay films on faces of peds and lining pores; very slightly acidic (pH 6.5); clear smooth boundary

Btk--12 to 17 inches, clay, moist, moderate medium granular structure; soft, friable, slightly sticky and slightly plastic, common very fine, and fine, and few medium roots; slightly acidic (pH 6.2); clear smooth boundary

Ck--17 to 42 inches, silty clay, strongly effervescent, moderately alkaline (pH 8.2)

TYPE LOCATION: Campbell County, Wyoming; refer to waypoint 36-1 on map included in this report.

RANGE IN CHARACTERISTICS (according to official series description): Depth to paralithic contact and bedrock is typically about 28 to 32 inches but ranges from 20 to 40 inches. Depth to continuous horizons of carbonate accumulation is 7 to 26 inches. Depth to the base of the argillic horizon ranges from 10 to 26 inches. Depth to the base of the argillic horizon ranges from 10 to 26 inches. Rock fragments range from 0 10 15 percent and are soft shale channers or semirounded sandstone pebbles. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F., which occurs about April 21-27, and is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for at least 90 cumulative days during this period. The mean annual soil temperature is 47 to 53 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or more for 175 to 192 days. EC ranges from 0-2 mmhos throughout.

SUITABILITY FOR TOPSOIL (according to WDEQ Guideline 1, 1994):

Marginal textures (clay to silty clay) were found at 3 to 42 inches. Estimated stripping depth is 42 inches.

GEOGRAPHIC SETTING (according to official series description): Cushman soils are on buttes, fan remnant, fan piedmonts, hills and ridges. Slopes range from 0 to 20 percent. The soils formed in moderately fine textured slopewash, alluvium and residuum. Surface erosion is common in overgrazed areas, and some thin eolian deposits overlie these soils in some areas. Elevations are 3.500 to 6,000 feet. The mean annual precipitation is 13 inches and ranges from 10 to 14 inches with over half of the annual precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September and October. The mean annual temperature is 43 to 51 degrees F. The frost-free season is about 105 to 130 days depending upon elevation, aspect, and air drainage.

CUSHMAN SERIES

SOIL MAPPING UNIT: 146-2 Cushman loam, 0 to 6 percent slopes
SOIL SAMPLE LOCATION: 37-1
TYPICAL PEDON: Cushman loam

TAXONOMIC CLASS: Fine-loamy, mixed, superactive, mesic Ustic Haplargids

A--0 to 3 inches; loam, moist; moderate medium granular structure; soft, friable, slightly sticky and slightly plastic, common very fine, and fine, and few medium roots; slightly acidic (pH 6.2); clear smooth boundary

AB--3 to 7 inches; clay loam, non effervescent, slightly acidic (pH 6.2)

Bt--7 to 15 inches; clay; moist, weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, moderately sticky and moderately plastic, common very fine, fine and few medium roots; few faint clay films on faces of peds and lining pores; very slightly acidic (pH 6.7); clear smooth boundary

Btk--15 to 18 inches; clay, moist, moderate medium granular structure; soft, friable, slightly sticky and slightly plastic, common very fine, and fine, and few medium roots; strongly effervescent, slightly alkaline (pH 7.8); clear smooth boundary

Ck --18 to 28 inches, clay, strongly effervescent, slightly alkaline (pH 7.8)

TYPE LOCATION: Campbell County, Wyoming; refer to waypoint 37-1 on map included in this report.

RANGE IN CHARACTERISTICS (according to official series description): Depth to paralithic contact and bedrock is typically about 28 to 32 inches but ranges from 20 to 40 inches. Depth to continuous horizons of carbonate accumulation is 7 to 26 inches. Depth to the base of the argillic horizon ranges from 10 to 26 inches. Depth to the base of the argillic horizon ranges from 10 to 26 inches. Rock fragments range from 0 10 15 percent and are soft shale channers or semirounded sandstone pebbles. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F., which occurs about April 21-27, and is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for atleast 90 cumulative days during this period. The mean annual soil temperature is 47 to 53 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or more for 175 to 192 days. EC ranges from 0-2 mmhos throughout.

SUITABILITY FOR TOPSOIL (according to WDEQ Guideline 1, 1994):

Marginal soil texture (clay) was found at 7 to 28 inches. Course fragment percentage was marginal (31 %) at 7-15 inches. Saturation percentage was marginal (80.7) at 15-28 inches. Estimated stripping depth is 28 inches.

GEOGRAPHIC SETTING (according to official series description): Cushman soils are on buttes, fan remnant, fan piedmonts, hills and ridges. Slopes range from 0 to 20 percent. The soils formed in moderately fine textured slopewash, alluvium and residuum. Surface erosion is common in overgrazed areas, and some thin eolian deposits overlie these soils in some areas. Elevations are 3.500 to 6,000 feet. The mean annual precipitation is 13 inches and ranges from 10 to 14 inches with over half of the

annual precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September and October. The mean annual temperature is 43 to 51 degrees F. The frost-free season is about 105 to130 days depending upon elevation, aspect, and air drainage.

BOWBAC SERIES

Soil Mapping Unit: 157-2 Bowbac fine sandy loam 0 to 6 percent slopes
Soil Sample ID: 80-1
Typical Pedon: Bowbac sandy loam on a northeast facing slope of 1 percent under native vegetation

Taxonomic Class: Fine-loamy, mixed, superactive, mesic Ustic Haplargids

A-0 to 3 inches, sandy loam, weak fine and very fine granular structure; soft, very friable, nonsticky nonplastic; many fine and very fine roots; non effervescent, slightly acidic (pH 6.4), abrupt wavy boundary.

BC-3 to 20 inches; sandy loam, non effervescent, very slightly acidic (pH 6.6)

C1-20 to 28 inches; sandy loam, non effervescent, very slightly alkaline (pH 7.1)

C2-28 to 37 inches; sandy loam, strongly effervescent, very slightly alkaline (pH 7.3)

Type Location: Campbell County, Wyoming; refer to waypoint 80-1 on map included in this report.

Range in Characteristics (according to official series description): Depth to soft sandstone ranges from 20 to 40 inches. Depth to continuous carbonate accumulation ranges from 10 to 35 inches, and depth to the base of the argillic horizon ranges from 10 to 35 inches. Coarse fragments range from 0 to 15 percent and are soft sandstone channers or semirounded pebbles. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F. and is never moist in some or all parts for as long as 60 consecutive days when the soil temperature at a depth of 20 inches is 41 degrees F., which occurs about April 21-27, but is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for at least 90 consecutive days during this period. The mean annual soil temperature is 47 to 53 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or more for 175 to 192 days. EC ranges from 0 to 2 mmhos throughout the profile.

Suitability for Topsoil (according to WDEQ Guideline 1, 1994):

No marginal or unsuitable parameters were found. The estimated stripping depth is 37 inches.

GEOGRAPHIC SETTING (according to official series description): Bowbac soils are on alluvial fans, terraces, dissected fan remnants, fan piedmonts, hillslopes, pediments, plateaus,

ridges and buttes. Slopes are 0 to 15 percent. Elevations are 3,500 to 6,500 feet. The average annual precipitation is 13 inches with over half of the annual precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September, and October. Precipitation ranges from 10 to 14 inches. The mean annual temperature ranges from 43 to 51 degrees F. The frost-free season is about 105 to 130 days.

SHINGLE SERIES

SOIL MAPPING UNIT: 124-2 Shingle loam, 3 to 30 percent slopes
SOIL SAMPLE LOCATION: 107-1
TYPICAL PEDON: Shingle clay loam on a toeslope of 6 percent in rangeland

TAXONOMIC CLASS: Loamy, mixed, superactive, calcareous, mesic, shallow Ustic Torriorthents.

A--0 to 2 inches; clay loam, moderate effervescent, slightly alkaline (pH 7.5)

C--2 to 14 inches; clay loam, strongly effervescent, neutral (pH 7.0)

TYPE LOCATION: Campbell County, Wyoming; refer to waypoint 107-1 on map included in this report.

RANGE IN CHARACTERISTICS (according to official series description): Depth to soft bedrock and paralithic contact ranges from 4 to 20 inches. The mean annual soil temperature is 47 to 53 degrees F. The soils commonly are calcareous throughout, but some pedons are leached to 6 inches The particle size control section averages 20 to 35 percent clay and has more than 15 percent but less than 35 percent fine or coarser sand. The soil is usually dry. The moisture control section is usually moist in April, May and early June. It is dry for 60 consecutive days or more during the 90 day period following the summer solstice. EC is 0 to 2 mmhos throughout.

SUITABILITY FOR TOPSOIL (according to WDEQ Guideline 1, 1994):

No unsuitable or marginal parameters were found. Estimated stripping depth is 14 inches.

GEOGRAPHIC SETTING (according to official series description): The Shingle soils occur on all hillslope positions. Slopes are 0 to 80 percent. These soils formed in colluvium and residuum weathered from soft, interbedded sandstone and shale or in alluvium from mudstone. Elevation is 3,200 to 6,500 feet. The mean annual precipitation is about 10 to 14 inches, most of which falls in April, May, and June. The mean annual temperature is about 45 degrees F. but ranges from 43 to 51 degrees F. The frost-free season is about 105 to 130 days.

KISHONA SERIES

Soil Mapping Unit: 116-2 Kishona fine sandy loam, 0 to 6 percent slopes
Soil Sample ID: 108-1
Typical Pedon: Kishona clay loam in rangeland

Taxonomic Class: Fine loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents

A--0 to 3 inches; clay loam, non effervescent, neutral (pH 7.0)

Bk--3 to 24 inches; silty clay loam, strongly effervescent, slightly alkaline (pH 7.5)

C1--24 to 30 inches; silty clay, strongly effervescent, slightly alkaline (pH 7.8)

C2--30 to 44 inches; silty clay, strongly effervescent, moderately alkaline (pH 8.0)

C3--44 to 46 inches; silty clay loam, strongly effervescent, moderately alkaline (pH 8.0)

Type Location: Campbell County, Wyoming; refer to waypoint 108-1 on map included in this report

Range in Characteristics (according to official series description): Rock fragments ranges from 0 to 15 percent. The mean annual soil temperature ranges from 48 to 53 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or more for 190 to 202 days. The depth to carbonates ranges from 0 to 10 inches. Saline phases are recognized. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F. and is never moist in some or all parts for as long as 90 consecutive days when the soil temperature at a depth of 20 inches is 48 degrees F. or more. The soil is moist for 60 consecutive days when the soil temperature at a depth of 20 inches is 41 degrees F., which occurs April 21-27, but is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for at least 90 days during that period.

The A horizon has hue of 2.5Y or 10YR, value of 4 to 6 dry, 3 to 5 moist, and chroma of 2 to 4. It is very fine sandy loam, fine sandy loam, loam, silt loam, silty clay loam or clay loam. It is neutral to moderately alkaline.

Suitability for Topsoil (according to WDEQ Guideline 1, 1994):

Marginal texture (silty clay) was found at a depth of 24 to 44 inches. Estimated stripping depth is 24 inches.

Geographic Setting (according to official series description): Kishona soils are on dissected alluvial fans, fan remnants, fan aprons, hills, ridges and terraces. Slopes are typically 0 to 6 percent but range up to 30 percent on dissected slopes. The soils formed in alluvium derived from sandstones and shales. Elevation is 3,500 to 6,700 feet. The average annual precipitation ranges form 10 top 14 inches with over one-half falling in April May and June and less than one inch falling in each month of July, August, September and October. The mean annual air temperature is about 45 degrees F. but ranges from 43 to 51 degrees F. The frost-free season is about 105 to 130 days.

BOWBAC SERIES

SOIL MAPPING UNIT: 157-2 Bowbac fine sandy loam, 0 to 6 percent slopes
SOIL SAMPLE LOCATION: 116-1
TYPICAL PEDON: Bowbac sandy loam

TAXONOMIC CLASS: Fine-loamy, mixed, superactive, mesic Ustic Haplargids

A--0 to 3 inches; sandy loam, slightly acidic (pH 6.3).

Bt1--3 to 12 inches; sandy clay loam, slightly acidic (pH 6.5).

Bt2--12 to 20 inches; sandy clay loam, very slightly acidic (pH 6.8).

Bk-- 20 to 24 inches; sandy clay loam, slightly alkaline (pH 7.3).

Cr— 24 to 36 inches; sandy clay loam, slightly effervescent, moderately alkaline (pH 8.0).

TYPE LOCATION: Campbell County, Wyoming; refer to waypoint 116-1 on map included in this report.

RANGE IN CHARACTERISTICS: Depth to soft sandstone ranges from 20 to 40 inches. Depth to continuous carbonate accumulation ranges from 10 to 35 inches, and depth to the base of the argillic horizon ranges from 10 to 35 inches. Coarse fragments range from 0 to 15 percent and are soft sandstone channers or semirounded gravel. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F. and is never moist in some or all parts for as long as 60 consecutive days when the soil temperature at a depth of 20 inches is 41 degrees F., which occurs about April 21-27, but is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for at least 90 cumulative days during this period. The mean annual soil temperature is 47 to 53 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or more for 175 to 192 days. EC ranges from 0 to 2 mmhos throughout the profile.

SUITABILITY FOR TOPSOIL (according to WDEQ Guideline 1, 1994):

No unsuitable or marginal parameters were found. Estimated stripping depth is 36 inches.

GEOGRAPHIC SETTING: Bowbac soils are on alluvial fans, terraces, dissected fan remnants, fan piedmonts, hillslopes, pediments, plateaus, ridges and buttes. Slopes are 0 to 15 percent. Elevations are 3,500 to 6,500 feet. The average annual precipitation is 13 inches with over half of the annual precipitation falling in April, May, and June and less than one inch falling in each

month of July, August, September, and October. Precipitation ranges from 10 to 14 inches. The mean annual temperature ranges from 43 to 51 degrees F. The frost-free season is about 105 to 130 days.

ULM SERIES

SOIL MAPPING UNIT: 226 Ulm loam, 0 to 6 percent slopes
SOIL SAMPLE LOCATION: 117-1
TYPICAL PEDON: Ulm clay loam-rangeland

TAXONOMIC CLASS: Fine, smectitic, mesic Ustic Haplargids

A-0 to 3 inches, clay loam, moist; strong fine granular structure; slightly hard, friable, sticky and plastic; many fine and few medium roots; slightly acidic (pH 6.1); clear smooth boundary

Bt1-3 to 10 inches, clay loam, moist; strong coarse prismatic structure parting to strong medium and coarse angular blocky; very hard, very firm, very sticky and very plastic; common fine and few medium roots; many prominent clay films on faces of peds; very slightly acidic (pH 6.6); clear wavy boundary.

Btk-21 to 32 inches, clay, moist; moderate medium prismatic parting to strong medium angular blocky structure; very hard, firm, very sticky and very plastic; common fine and few medium roots; common distinct clay films on faces of peds; slightly effervescent; calcium carbonate mostly disseminated with few prominent masses; moderately alkaline (pH 8.1);clear wavy boundary.

Ck1-32 to 40 inches, clay loam, strongly effervescent, moderately alkaline (pH 8.4)

Ck2-42 to 50 inches, sandy clay loam, violently effervescent, moderately alkaline (pH 8.2)

TYPE LOCATION: Campbell County, Wyoming; refer to waypoint 117-1 on map included in this report.

RANGE IN CHARACTERISTICS (according to official series description): Depth to calcareous material ranges from 12 to 33 inches. Rock fragments range from 0 to 15 percent channers. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F., which occurs about April 21-27, and is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for at least 90 cumulative days during this period. The mean annual soil temperature is 47 to 53 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or more for 175 to 192 days.

SUITABILITY FOR TOPSOIL (according to WDEQ Guideline 1, 1994):

Marginal texture (clay) was found at 10 to 32 inches. Estimated stripping depth is 50 inches.

GEOGRAPHIC SETTING (according to official series description): Ulm soils are on relict alluvial terraces, alluvial fans, fan remnants, plateaus and footslopes and toeslopes of hills. Slopes are 0 to 18 percent. The soils formed in fine and medium textured alluvium derived from interbedded shales and agrillaceous sandstone. Elevations are 3,500 to 6,500 feet. The mean annual precipitation is 10 to 14 inches with over half of the annual precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September, and October. The mean annual air temperature ranges from 46 to 51 degrees F. The frost-free season is 105 to 130 days.

ZIGWEID SERIES

SOIL MAPPING UNIT: 116-3 Zigweid loam, 0 to 6 percent slopes
Soil Sample ID: 123-1
TYPICAL PEDON: Zigweid clay- on a 3 percent southwest facing slope utilized as rangeland

TAXONOMIC CLASS: Fine-loamy, mixed, superactive, mesic Ustic Haplocambids

A--0 to 3 inches; clay, non effervescent; slightly acidic (pH 7.6).

Bw--3 to 14 inches; clay, non effervescent, very slightly acidic (pH 7.3).

BC--14 to 20 inches; clay, strongly effervescent, slightly alkaline (pH 7.8).

C1k--20 to 32 inches; clay, violently effervescent; moderately alkaline (pH 8.2).

C2k--32 to 44 inches; clay, violently effervescent; moderately alkaline (pH 8.3).

C3k—44 to 54 inches; clay, violently effervescent, moderately alkaline (pH 8.2).

C4k—54 to 60 inches; clay, violently effervescent, moderately alkaline (pH 8.1).

TYPE LOCATION: Campbell County, Wyoming; refer to waypoint 123-1 on map included in this report.

RANGE IN CHARACTERISTICS (according to official series description): Depth to carbonates ranges from 0 to 8 inches. Depth to the Bk horizon and the base of the cambic horizon ranges from 10 to 22 inches. The particle-size control section and the soil profile are clay loam or loam. Clay ranges from 18 to 35 percent, silt from 20 to 55 percent, and sand from 15 to 50 percent with more than 15 percent but less than 35 percent fine sand or coarser. Rock fragments range from 0 to 15 but are typically less than 5 percent and are mostly soft shale chips. The moisture control section is usually dry in all parts for 90 cumulative days following the summer solstice and for 60 consecutive days during this period. The mean annual soil temperature is 47 to 53 degrees F. The soil temperature at a depth of 20 inches is 41 degrees F. or warmer for 175 to 192 days.

SUITABILITY FOR TOPSOIL (according to WDEQ Guideline 1, 1994):

No unsuitable or marginal parameters were found. Estimated stripping depth is 20 inches.

GEOGRAPHIC SETTING (according to official series description): These soils are on fan

aprons, alluvial fans, fan remnants, terraces, fan piedmonts, ridges and hills. In many areas they are dissected. Slopes range from 0 to 20 percent. These soils formed in calcareous, moderately fine textured sediments derived from interbedded shale and soft sandstone. Elevations are 3,500 to 6,600 feet. The mean annual precipitation is 13 inches with over half of the annual precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September, and October. Precipitation ranges from 10 to 14 inches. The mean annual temperature is about 46 degrees F., and ranges from 43 to 51 degrees F. The frost-free season is about 105 to 130 days.

TALUCE SERIES

SOIL MAPPING UNIT: 221-3 Taluce fine sandy loam, 6 to 30 percent slopes
Soil Sample ID: 126-1
TYPICAL PEDON: Taluce sandy loam-on a convex north-facing slope, used as rangeland

TAXONOMIC CLASS: Loamy, mixed, superactive, calcareous, mesic, shallow Ustic Torriorthents

A- 0 to 2 inches, sandy loam, moist; moderate fine and medium granular structure; soft, very friable, nonsticky and nonplastic; common fine roots; slightly effervescent, calcium carbonate disseminated; very slightly acidic (pH 6.8); clear smooth boundary.

Ck-2 to 10 inches, sandy loam to sandy clay loam, moist; weak medium platy rock structure; slightly hard, very friable, nonsticky and nonplastic; common fine roots; slightly effervescent, calcium carbonate disseminated; slightly alkaline (pH 7.6)

TYPE LOCATION: Campbell County, Wyoming; refer to waypoint 126-1 on map included in this report.

RANGE IN CHARACTERISTICS (according to official series description): Depth to bedrock ranges from 6 to 20 inches. Typically, these soils are calcareous throughout, but some pedons are leached to a depth of as much as 4 inches. Rock fragments range from 0 to 15 percent. The particle-size control section has 10 to 18 percent clay. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F. and is never moist in some or all parts for as long as 60 consecutive days when the soil temperature at a depth of 20 inches is 41 degrees F., which occurs about April 21-27. It is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for at least 90 cumulative days during this period.

SUITABILITY FOR TOPSOIL (according to WDEQ Guideline 1, 1994):

No marginal or unsuitable parameters were found. Estimated stripping depth is 10 inches.

GEOGRAPHIC SETTING (according to official series description): Taluce soils are on ridges and hills. Slope ranges from 3 to 70 percent. They formed in residuum and slope alluvium derived from sandstone. The mean annual precipitation ranges from 10 to 17 inches with over half of the precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September, and October. The mean annual air temperature is 42 to 51

degrees F. Elevation is 3,500 to 6,500 feet. The frost-free season is 100 to 130 days.

FORKWOOD SERIES

SOIL MAPPING UNIT: 144 Forkwood loam, 0 to 6 percent slopes
Soil Sample ID: 127-1
TYPICAL PEDON: Forkwood loam

TAXONOMIC CLASS: Fine-loamy, mixed, superactive, mesic Ustic Haplargids

A--0 to 3 inches; loam, non effervescent; slightly acidic (pH 6.1).

Bt--3 to 20 inches; clay loam, non effervescent, very slightly acidic (pH 6.9).

Btk--20 to 27 inches; clay loam, strongly effervescent; slightly alkaline (pH 7.8).

C1k--27 to 45 inches; clay, violently effervescent; moderately alkaline (pH 8.1).

C2k--45 to 51 inches; clay loam, violently effervescent; moderately alkaline (pH 8.2).

C3k—51 to 60 inches; clay loam, moderate effervescent, moderately alkaline (pH 8.2).

TYPE LOCATION: Campbell County, Wyoming; refer to waypoint 127-1 on map included in this report.

RANGE IN CHARACTERISTICS (according to official series description): Depth to the base of the argillic horizon is 10 to 33 inches, and depth to continuous horizons of carbonate accumulation is 10 to 33 inches. Rock fragments range from 0 to 15 percent. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F., which occurs about April 21-27, and is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for at least 90 cumulative days during this period. The mean annual soil temperature ranges from 47 to 53 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or more for 175 to 192 days. EC ranges from 0 to 4 mmhos/cm throughout the profile. Bedrock is deeper than 60 inches.

SUITABILITY FOR TOPSOIL (according to WDEQ Guideline 1, 1994):

Marginal texture (clay) was found at 27 to 45 inches. Estimated stripping depth is 60 inches.

GEOGRAPHIC SETTING (according to official series description): Forkwood soils are on terraces, alluvial fans, fan remnants, hills, ridges and pediments. Slopes are 0 to 15 percent. The soils formed in slopewash alluvium derived from interbedded shales and argillaceous sandstone.

Elevations are 3,500 to 6,000 feet. The average annual precipitation is 10 to 14 inches with over half of the annual precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September, and October. The mean annual air temperature ranges from 43 to 51 degrees F. The estimated frost-free season is about 105 to 130 days depending upon elevation, aspect, and air drainage.

BIDMAN SERIES

Soil Mapping Unit: 111-1 Birdman loam 0 to 6 percent slopes
Soil Sample ID: 300
Typical Pedon: Bidman loam-grassland

Taxonomic Class: Fine, smectitic, mesic Ustic Paleargids

A-0 to 4 inches: clay loam, non effervescent; very slightly acidic (pH 6.7)

Bt1-4 to 20 inches: clay, moist; strong medium prismatic structure that parts to strong medium angular blocky; hard, very sticky and very plastic, many prominent clay films on faces of peds, in channels and pores: very slightly acidic (pH 6.8); clear wavy boundary

Bt2-20 to 28 inches: clay, non effervescent; slightly alkaline (pH 7.5)

Btk-28 to 40 inches: clay loam to clay, moist; weak coarse prismatic structure that parts to moderate coarse angular and subangular blocks; extremely hard, very friable; sticky and plastic; few distinct clay films on faces of peds; strongly effervescent; moderately alkaline (pH 8.0): gradual wavy boundary

Ck- 40 to 49 inches: clay loam, moist; massive; hard, very friable, sticky and slightly plastic, violently effervescent, slightly alkaline (pH 7.9)

Type Location: Campbell County, Wyoming; refer to waypoint 300 on map included in this report

Range in Characteristics (according to official series description): Depth to calcareous material ranges from 8 to 26 inches, Depth to the base of the argillic horizon range from 15 to 36 inches. Organic carbon ranges from .6 to 1.5 percent in the surface horizons and decreases uniformly with increasing depth. Cation exchange capacity ranges from 60 t0 90 millequivalents per 100 grams of clay. Rock fragments are typically less than 2 percent but ranges from 0 to 15 percent. This soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F. It is never moist in some or all parts for as long as 60 consecutive days during this same period. It is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for at least 90 cumulative days during this period. The mean annual soil temperature is 47 to 53 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or warmer for 175 to 195 days. The mean summer soil temperature at depth of 20 inches ranges from 59 to 65 degrees F.

Suitability for Topsoil (according to WDEQ Guideline 1, 1994):

Marginal Texture (clay) was found at 4 to 49 inches. Estimated stripping depth is 49 inches.

Geographic Setting (according to official series description): The Bidman soils are on alluvial fans, fan remnants, terraces, ridges and hills. Elevation is 2,600 to 6,000 feet. Slopes range from 0 to 25 percent. These soils formed in thick, calcareous alluvial sediments derived from sedimentary rock. At the type location the mean annual temperature is 47 degrees F., and the mean summer temperature is 66 degrees F. The average annual precipitation is about 12 inches with about half the precipitation in April, May, and June. Precipitation ranges from 10 to 14 inches. The frost-free season is 100 to 130 days.

VONALEE SERIES

Soil Mapping Unit: 235 Vonalee fine sandy loam, 0 to 10 percent slopes
Soil Sample ID: 301
Typical Pedon: Vonalee fine silty clay loam-on north facing hill slope of 6 percent utilized as rangeland.

Taxonomic Class: Coarse-loamy, mixed, superactive, mesic Ustic Haplargids

A-0 to 2 inches, silty clay loam, moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots throughout and common medium throughout; non effervescent: very slightly acidic (pH 6.7) clear smooth boundary

Bt-2 to 15 inches, clay loam to loam, moist, moderate medium subangular blocky structure, soft, very friable, nonsticky and nonplastic; many very fine and fine roots throughout and common medium throughout; strongly effervescent, very slightly alkaline (pH 7.4)

C1-15 to 24 inches, sandy clay loam, moderate to strongly effervescent, moderately alkaline (pH 8.2)

C2-24 to 38 inches, sandy loam, strongly effervescent, slightly alkaline (pH 7.9)

C3-38 to 50 inches, sandy clay loam, strongly effervescent, moderately alkaline (pH 8.1)

C4-50 to 60 inches, sandy clay loam, strongly effervescent, moderately alkaline (pH 8.1)

Type Location: Campbell County, Wyoming; refer to waypoint 301 on map included in this report

Range in Characteristics (according to official series description): Rock fragments are typically less than 5 percent but may range to 15 percent. Depth to continuous carbonate accumulation ranges from 11 to 40 inches, but the soils are typically calcareous above 30 inches. Depth to bedrock is greater than 60 inches. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F. It is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for at least 90 cumulative days during this period. The average annual soil temperature is 47 to 51 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F., or more for 175 to 192 days.

Suitability for Topsoil (according to WDEQ Guideline 1, 1994):

Marginal saturation percentage (83.6) was found at 0 to 2 inches. The estimated stripping depth is 60 inches.

Geographic Setting (according to official series description): Vonalee soils are on ridges, hills, alluvial fans, fan remnants and high terraces. Slopes are 0 to 30 percent. The soils formed in coarse and moderately coarse alluvium or eolian deposits derived largely from calcareous sandstone. Elevations are 3,500 to 6,500 feet. Precipitation ranges from 10 to 14 inches with over half of the annual precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September, and October. The average annual air temperature ranges from 44 to 49 degrees F. The frost-free season is about 105 to 130 days.

HILAND SERIES

SOIL MAPPING UNIT: 158-1 Hiland fine sandy loam, 6 to 15 percent slopes
SOIL SAMPLE LOCATION: 302
TYPICAL PEDON: Hiland sandy loam on northeast facing slope of 3 percent; utilized as rangeland

TAXONOMIC CLASS: Fine-loamy, mixed, superactive, mesic Ustic Haplargids

A--0 to 3 inches; sandy loam, non effervescent, very slightly acidic (pH 6.8).

BA--3 to 12 inches; sandy loam, non effervescent, slightly acidic (pH 6.3).

Bt--12 to 20 inches; sandy clay loam; non effervescent, very slightly acidic (pH 6.6).

Btk--20 to 30 inches; sandy clay loam, strongly effervescent, very slightly alkaline (pH 7.2).

C1k--30 to 48 inches, clay loam, violently effervescent, moderately alkaline (pH 8.0).

C2k—48 to 60 inches; clay loam, violently effervescent, moderately alkaline (pH 8.3).

TYPE LOCATION: Campbell County, Wyoming; refer to waypoint 302 on map included in this report.

RANGE IN CHARACTERISTICS (according to official series description): Gravel ranges from 0 to 15 percent in the solum and from 0 to 30 percent in the 2C or Bk horizons. The base of the Bt or Btk ranges from 15 to 35 inches. Depth to continuous carbonate accumulation ranges from 14 to 32 inches. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F. and is never moist in all parts for as long as 60 consecutive days when the soil temperature at a depth of 20 inches is 41 degrees F., which occurs about April 21-27, but is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for at least 90 cumulative days during this period. The mean annual soil temperature is 47 to 52 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or more for 175 to 192 days. EC ranges from 0 to 2 mmhos from the surface to the base of the Bt and from 1 to 4 mmhos below the base of the Bt. Bedrock is deeper than 60 inches.

SUITABILITY FOR TOPSOIL (according to WDEQ Guideline 1, 1994):

No unsuitable or marginal values were present. Estimated stripping depth is 60 inches.

GEOGRAPHIC SETTING (according to official series description): Hiland soils are on relict surfaces consisting of terraces, fan remnants, pediments, fans, ridges, hills and stabilized dunes. Slopes are 0 to 20 percent. They formed in moderately coarse alluvium and eolian material derived predominantly from sandstone. Elevations are 3,500 to 6,300 feet. The average annual precipitation is about 12 inches with over half of the annual precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September, and October. Precipitation ranges from 10 to 14 inches. The mean annual air temperature is 43 to 51 degrees F. The frost-free season is 105 to 130 days.

SHINGLE SERIES

SOIL MAPPING UNIT: 124-2 Shingle loam, 3 to 30 percent slopes
SOIL SAMPLE LOCATION: 303
TYPICAL PEDON: Shingle clay loam

TAXONOMIC CLASS: Loamy, mixed, superactive, calcareous, mesic, shallow Ustic Torriorthents.

A--0 to 3 inches; clay loam, non effervescent, slightly alkaline (pH 7.6).

AC--3 to 10 inches; clay loam, strongly effervescent, slightly alkaline (pH 7.8).

Cr--10 to 18 inches; silty clay loam; strongly effervescent, slightly alkaline (pH 7.9).

TYPE LOCATION: Campbell County, Wyoming; refer to waypoint 303 on map included in this report.

RANGE IN CHARACTERISTICS (according to official series description): Depth to soft bedrock and paralithic contact ranges from 4 to 20 inches. The mean annual soil temperature is 47 to53 degrees F. The soils commonly are calcareous throughout, but some pedons are leached to 6 inches The particle size control section averages 20 to 35 percent clay and has more than 15 percent but less than 35 percent fine or coarser sand. The soil is usually dry. The moisture control section is usually moist in April, May and early June. It is dry for 60 consecutive days or more during the 90 day period following the summer solstice. EC is 0 to 2 mmhos throughout.

SUITABILITY FOR TOPSOIL (according to WDEQ Guideline 1, 1994):

No unsuitable or marginal parameters were found. Estimated stripping depth is 18 inches.

GEOGRAPHIC SETTING (according to official series description): The Shingle soils occur on all hillslope positions. Slopes are 0 to 80 percent. These soils formed in colluvium and residuum weathered from soft, interbedded sandstone and shale or in alluvium from mudstone. Elevation is 3,200 to 6,500 feet. The mean annual precipitation is about 10 to 14 inches, most of which falls in April, May, and June. The mean annual temperature is about 45 degrees F. but ranges from 43 to 51 degrees F. The frost-free season is about 105 to 130 days.

THEEDLE SERIES

SOIL MAPPING UNIT: 127-2 Theedle loam, 0 to 30 percent slopes
SOIL SAMPLE LOCATION: 304
TYPICAL PEDON: Theedle clay loam- on west facing hill footslope of 6 percent-rangeland

TAXONOMIC CLASS: Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents.

A--0 to 3 inches; clay-clay loam, strongly effervescent, slightly alkaline (pH 7.6)

C--3 to 20 inches; clay loam, violently effervescent, neutral (pH 8.1)

TYPE LOCATION: Campbell County, Wyoming; refer to waypoint 304 on map included in this report.

RANGE IN CHARACTERISTICS (according to official series description): Depth to soft, gray, calcareous sandstone or sandy whale ranges from 20 to 40 inches but is typically less than 32 inches. The soil lacks a cambic horizon, but structural Bw horizons are present in about half the pedons observed. The soil is typically calcareous throughout but may be leached up to 5 inches. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F. and is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for at least 90 cumulative days during this period. The mean annual soil temperature is 47 to 51 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or more for 175 to 192 days. The particle size control section averages between 18 and 35 percent clay and is loam, clay loam, or sandy clay loam with more than 15 but less than 35 percent fine or coarser sand. The soil has up to 10 percent rock fragments throughout.

SUITABILITY FOR TOPSOIL (according to WDEQ Guideline 1, 1994):

Marginal texture (clay) was found at a depth of 0 to 3 inches. Estimated stripping depth is 20 inches.

GEOGRAPHIC SETTING (according to official series description): Theedle soils are on rock-controlled fans aprons, fan pediments, and undulating to rolling uplands. They may occupy all components of the hill slope p[profile but typically are on the lower shoulder, foot slope, and toe slope. Slopes range from 0 to 75 percent. The soils formed in medium textured slope alluvium and residuum derived primarily from interbedded sandstone and shale. Elevation is 3,500 to 6,500 feet. The average annual precipitation is 12 inches with over half of the annual precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September, and October. Precipitation ranges from 10 to 14 inches. The mean annual

air temperature ranges from 45 to 51 degrees F. The frost-free season is 105 to 130 days.

CUSHMAN SERIES

SOIL MAPPING UNIT: 146-2 Cushman loam, 0 to 6 percent slopes
SOIL SAMPLE LOCATION: 305
TYPICAL PEDON: Cushman clay loam- on south facing slope of about 3 percent under native grass vegetation

TAXONOMIC CLASS: Fine-loamy, mixed, superactive, mesic Ustic Haplargids

A--0 to 2 inches; clay loam, strongly effervescent,) moist, moderate medium granular structure; soft, friable, slightly sticky and slightly plastic, common very fine, and fine, and few medium roots; slightly alkaline (pH 7.5); clear smooth boundary

Btk1--2 to 12 inches; clay loam, moist, moderate medium granular structure; soft, friable, slightly sticky and slightly plastic, common very fine, and fine, and few medium roots; slightly alkaline (pH 7.8); clear smooth boundary

Btk2--12 to 20 inches; clay loam; strongly effervescent, moderately alkaline (pH 8.2)

Bk--20 to 26 inches; clay loam, moist; weak coarse subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic, violently effervescent; calcium carbonated as common prominent irregularly shaped masses and many fine filaments and masses; moderately alkaline (pH 8.2)

Cr --26 to 36 inches, clay loam, strongly effervescent

TYPE LOCATION: Campbell County, Wyoming; refer to waypoint 305 on map included in this report.

RANGE IN CHARACTERISTICS (according to official series description): Depth to paralithic contact and bedrock is typically about 28 to 32 inches but ranges from 20 to 40 inches. Depth to continuous horizons of carbonate accumulation is 7 to 26 inches. Depth to the base of the argillic horizon ranges from 10 to 26 inches. Depth to the base of the argillic horizon ranges from 10 to 26 inches. Rock fragments range from 0 10 15 percent and are soft shale channers or semirounded sandstone pebbles. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F., which occurs about April 21-27, and is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for atleast 90 cumulative days during this period. The mean annual soil temperature is 47 to 53 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or more for 175 to 192 days. EC ranges from 0-2 mmhos throughout.

SUITABILITY FOR TOPSOIL (according to WDEQ Guideline 1, 1994):

No unsuitable or marginal parameters were found. Estimated stripping depth is 36 inches.

GEOGRAPHIC SETTING (according to official series description): Cushman soils are on buttes, fan remnant, fan piedmonts, hills and ridges. Slopes range from 0 to 20 percent. The soils formed in moderately fine textured slopewash alluvium and residuum. Surface erosion is common in overgrazed areas, and some thin eolian deposits overlie these soils in some areas. Elevations are 3.500 to 6,000 feet. The mean annual precipitation is 13 inches and ranges from 10 to 14 inches with over half of the annual precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September and October. The mean annual temperature is 43 to 51 degrees F. The frost-free season is about 105 to 130 days depending upon elevation, aspect, and air drainage.

THEEDLE SERIES

SOIL MAPPING UNIT: 127-2 Theedle loam, 0 to 3 percent slopes
SOIL SAMPLE LOCATION: 306
TYPICAL PEDON: Theedle clay loam- on west facing hill footslope of 6 percent-rangeland

TAXONOMIC CLASS: Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents.

A--0 to 2 inches; clay loam, non effervescent, slightly alkaline (pH 7.7)

BCk-- 2 to 20 inches; clay, strongly effervescent, moderately alkaline (pH 8.1)

TYPE LOCATION: Campbell County, Wyoming; refer to waypoint 304 on map included in this report.

RANGE IN CHARACTERISTICS (according to official series description): Depth to soft, gray, calcareous sandstone or sandy whale ranges from 20 to 40 inches but is typically less than 32 inches. The soil lacks a cambic horizon, but structural Bw horizons are present in about half the pedons observed. The soil is typically calcareous throughout but may be leached up to 5 inches. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F. and is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for at least 90 cumulative days during this period. The mean annual soil temperature is 47 to 51 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or more for 175 to 192 days. The particle size control section averages between 18 and 35 percent clay and is loam, clay loam, or sandy clay loam with more than 15 but less than 35 percent fine or coarser sand. The soil has up to 10 percent rock fragments throughout.

SUITABILITY FOR TOPSOIL (according to WDEQ Guideline 1, 1994):

Marginal texture (clay) was found at a depth of 2 to 20 inches. Estimated stripping depth is 20 inches.

GEOGRAPHIC SETTING (according to official series description): Theedle soils are on rock-controlled fans aprons, fan pediments, and undulating to rolling uplands. They may occupy all components of the hill slope p[profile but typically are on the lower shoulder, foot slope, and toe slope. Slopes range from 0 to 75 percent. The soils formed in medium textured slope alluvium and residuum derived primarily from interbedded sandstone and shale. Elevation is 3,500 to 6,500 feet. The average annual precipitation is 12 inches with over half of the annual precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September, and October. Precipitation ranges from 10 to 14 inches. The mean annual

air temperature ranges from 45 to 51 degrees F. The frost-free season is 105 to 130 days.

ADDENDUM 2.6-D

LABORATORY RESULTS

LABORATORY ANALYTICAL REPORT

Client: Energy Metals Corp
Project: EM Moore Ranch Baseline Soils 432a
Workorder: C07051219

Report Date: 06/28/07
Date Received: 05/24/07

		Analysis	EC SatPst	Saturation SatPst	pH SatPst	Ca SatPst	Mg SatPst	Na SatPst	SAR	Se-ASDTPA	B-CACL2	Sand	Silt	Clay	Texture
		Units	mmhos/cm	%	s_u_	meq/L	meq/L	meq/L	unitless	mg/kg-dry	mg/kg-dry	%	%	%	
Sample ID	Client Sample ID	Depth	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results
C0705121 9-001	WP 126-1	0-3	0.62	33.6	6.3	3.2	1.6	0.13	0.05	0.011	< 0.20	55	25	19	SL
C0705121 9-002	WP 126-1	3-12	0.32	38.1	6.5	2.2	1.1	0.14	0.11	0.009	< 0.20	54	21	25	SCL
C0705121 9-003	WP 126-1	12-20	1.66	43.1	6.8	10	4.9	0.22	0.09	0.005	< 0.20	57	19	24	SCL
C0705121 9-004	WP 126-1	20-24	3.55	48.9	7.3	23	11	0.48	0.10	< 0.005	< 0.20	53	19	28	SCL
C0705121 9-005	WP 126-1	24-36	0.63	51.5	8.0	2.6	3.1	0.31	0.18	< 0.005	< 0.20	54	17	29	SCL
C0705121 9-006	WP 127-1	0-3	0.67	48.6	6.1	3.7	3.1	0.14	0.07	0.011	< 0.20	35	35	30	CL
C0705121 9-007	WP 127-1	3-10	0.42	48.6	6.6	2.5	2.1	0.39	0.25	0.005	< 0.20	34	34	32	CL
C0705121 9-008	WP 127-1	10-21	0.34	69.0	7.1	1.4	1.6	0.95	0.79	< 0.005	0.25	24	33	43	C
C0705121 9-009	WP 127-1	21-32	0.57	64.6	8.1	1.7	2.2	2.0	1.44	< 0.005	0.34	28	31	41	C
C0705121 9-010	WP 127-1	32-42	0.52	55.4	8.4	1.2	1.7	2.2	2.37	0.005	0.46	40	28	32	CL
C0705121 9-011	WP 127-1	42-50	1.04	44.4	8.2	2.3	3.6	4.5	2.64	0.011	0.44	49	19	32	SCL
C0705121 9-012	WP 128-1	0-3	0.65	45.7	7.5	5.9	2.0	0.12	0.05	0.015	< 0.20	38	32	30	CL
C0705121 9-013	WP 128-1	3-14	0.67	55.0	7.3	4.2	3.1	0.42	0.21	0.015	< 0.20	32	30	38	CL
C0705121 9-014	WP 128-1	14-20	0.67	46.9	7.8	3.6	3.1	0.69	0.38	0.011	< 0.20	42	26	32	CL
C0705121 9-015	WP 128-1	20-32	0.62	53.2	8.2	2.1	3.0	1.5	0.97	0.020	0.22	25	37	37	CL
C0705121 9-016	WP 128-1	32-44	1.34	49.9	8.3	2.6	5.6	5.2	2.67	0.137	0.37	29	37	34	CL
C0705121 9-017	WP 128-1	44-54	3.56	56.1	8.2	7.4	19	12	3.57	1.37	1.0	40	29	31	CL
C0705121 9-018	WP 128-1	44-54								2.31					
C0705121 9-019	WP 128-1	54-60	7.12	57.1	8.1	36	51	19	3.05	2.06	0.23	32	33	35	CL
C0705121 9-020	WP 126-1	0-2	0.54	48.6	6.8	9.1	2.0	0.07	0.03	0.005	0.20	69	12	19	SL
C0705121 9-021	WP 126-1	2-10	0.53	41.8	7.6	4.8	1.1	0.13	0.05	0.011	< 0.20	62	18	20	SL - SCL
C0705121 9-022	WP 127-1	0-2	0.48	49.1	6.1	3.3	1.9	0.07	0.04	0.010	< 0.20	47	32	21	L
C0705121 9-023	WP 127-1	2-20	0.62	54.4	6.9	3.6	2.4	0.15	0.09	0.007	< 0.20	44	24	32	CL
C0705121 9-024	WP 127-1	20-27	0.60	56.9	7.8	4.6	3.5	0.47	0.23	< 0.005	< 0.20	31	31	38	CL
C0705121 9-025	WP 127-1	27-45	0.44	55.7	8.1	1.4	1.8	2.2	1.68	0.014	0.29	20	37	43	C
C0705121 9-026	WP 127-1	45-51	0.56	54.3	8.2	1.5	1.8	3.5	2.95	0.042	0.78	36	25	39	CL
C0705121 9-027	WP 127-1	51-60	1.11	50.4	8.2	3.4	3.4	5.7	3.08	0.049	1.0	35	28	37	CL
C0705121 9-028	WP 300	0-4	0.56	48.0	6.7	3.9	3.0	0.25	0.14	0.010	< 0.20	35	31	34	CL
C0705121 9-029	WP 300	4-20	0.32	74.6	6.8	1.5	1.5	0.83	0.68	0.005	0.23	24	26	50	C
C0705121 9-030	WP 300	20-25	0.66	68.7	7.5	2.9	3.0	1.9	1.12	< 0.005	0.31	25	31	44	C
C0705121 9-031	WP 300	25-40	0.77	59.8	8.0	2.4	2.8	3.1	1.94	0.010	0.55	34	25	40	C - CL
C0705121 9-032	WP 300	40-49	2.61	51.7	7.9	14	14	6.2	1.85	0.037	0.86	38	26	36	CL
C0705121 9-033	WP 301	0-2	1.68	63.6	6.7	14	5.6	0.22	0.07	0.018	0.29	20	51	29	SICL
C0705121 9-034	WP 301	2-15	1.04	45.3	7.4	6.9	4.3	0.73	0.33	0.019	0.34	45	28	27	CL - L
C0705121 9-035	WP 301	15-24	1.09	37.1	8.2	5.1	3.3	6.5	4.04	0.010	0.26	50	24	26	SCL
C0705121 9-036	WP 301	24-28	0.59	41.6	7.9	2.6	2.5	5.2	3.25	0.007	< 0.20	67	14	19	SL
C0705121 9-037	WP 301	28-50	0.74	39.7	8.1	2.0	1.4	4.7	3.67	< 0.005	< 0.20	47	25	28	SCL
C0705121 9-038	WP 301	50-60	0.42	34.1	8.1	1.0	0.44	3.5	4.11	< 0.005	< 0.20	65	20	15	SCL
C0705121 9-039	WP 302	0-3	0.73	45.4	6.8	6.3	2.3	0.11	0.05	0.009	< 0.20	61	23	16	SL
C0705121 9-040	WP 302	3-12	0.27	37.5	6.3	2.3	1.1	0.09	0.07	0.008	< 0.20	62	20	18	SL
C0705121 9-040	WP 302	12-20	0.28	39.3	6.5	2.0	1.0	0.12	0.11	0.005	< 0.20	54	31	15	SCL

LABORATORY ANALYTICAL REPORT

Client: Energy Metals Corp
Project: EM Moore Ranch Baseline Soils 4-32a
Workorder: CD7051219

Report Date: 06/28/07
Date Received: 05/24/07

		Analysis	EC SatPst	Saturation SatPst	pH SatPst	Ca SatPst	Mg SatPst	Na SatPst	SAR	Se-ASDTPA	B-CACL2	Sand	Silt	Clay	Texture
		Units	umahos/cm	%	s_u_	meq/L	meq/L	meq/L	unitless	mg-kg-dry	mg/kg-dry	%	%	%	
Sample ID	Client Sample ID	Depth	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results
CD7051219-041	WP 302	28-35	3.60	42.6	7.2	4.1	2.4	0.15	0.10	0.005	< 0.20	50	20	30	SCL
CD7051219-042	WP 302	38-46	3.41	47.6	6.0	2.2	2.1	0.23	0.14	< 0.005	< 0.20	41	24	35	CL
CD7051219-043	WP 302	48-60	3.05	51.1	6.3	3.69	1.5	0.35	0.31	< 0.005	< 0.20	29	34	37	CL
CD7051219-044	WP 303	0-2	0.74	55.4	7.6	7.4	1.4	0.11	0.05	0.012	< 0.20	31	37	32	CL
CD7051219-045	WP 303	3-10	0.50	62.2	7.8	6.6	2.2	0.22	0.11	0.015	< 0.20	39	30	31	CL
CD7051219-046	WP 303	10-19	1.24	57.5	7.9	6.9	4.5	0.62	0.27	0.014	< 0.20	4.8	64	32	SICL
CD7051219-047	WP 304	0-2	0.92	57.4	7.5	8.6	1.8	0.09	0.04	0.012	0.26	26	34	40	C - CL
CD7051219-048	WP 304	3-20	0.40	59.4	8.1	2.4	1.6	0.27	0.16	0.005	< 0.20	38	27	35	CL
CD7051219-049	WP 305	0-2	1.09	48.0	7.5	11	1.8	0.13	0.05	0.010	< 0.20	30	39	31	CL
CD7051219-050	WP 305	2-12	0.90	58.4	7.8	7.3	2.0	0.15	0.07	0.015	< 0.20	31	34	35	CL
CD7051219-051	WP 305	12-20	0.42	55.6	8.2	2.2	1.5	0.35	0.25	0.007	< 0.20	36	34	30	CL
CD7051219-052	WP 305	20-26	0.61	53.6	8.2	3.2	4.0	0.98	0.62	0.008	< 0.20	30	37	33	CL
CD7051219-053	WP 306	0-2	0.78	59.6	7.7	7.0	1.5	0.15	0.07	0.008	0.21	29	32	39	CL
CD7051219-054	WP 306	2-20	6.64	72.2	8.1	3.4	2.5	2.7	1.55	0.008	< 0.20	24	25	51	C
CD7051219-055	WP 14-1	0-5	0.76	45.0	6.8	6.2	2.7	0.11	0.05	0.015	< 0.20	26	53	21	SIL
CD7051219-056	WP 14-1	5-16	0.30	50.8	6.5	2.0	1.2	0.13	0.10	0.011	< 0.20	43	33	24	L
CD7051219-057	WP 14-1	16-31	0.36	51.8	6.8	2.1	1.6	0.17	0.13	0.008	< 0.20	37	27	36	CL
CD7051219-058	WP 14-1	31-42	0.41	41.2	7.2	3.1	1.7	0.22	0.17	< 0.005	< 0.20	49	26	25	SCL
CD7051219-059	WP 14-1	42-51	0.36	42.6	8.1	1.9	1.6	0.32	0.24	< 0.005	< 0.20	51	18	31	SCL
CD7051219-060	WP 14-1	51-60	0.31	40.4	8.2	1.4	1.7	0.35	0.29	< 0.005	< 0.20	59	19	22	SCL
CD7051219-061	WP 19-1	0-2	0.76	42.6	6.2	4.3	2.6	0.12	0.05	0.014	< 0.20	42	37	21	L
CD7051219-062	WP 19-1	3-20	0.28	51.9	7.1	3.93	0.66	0.93	1.04	0.007	0.29	26	51	23	SIL
CD7051219-063	WP 19-1	20-24	1.53	64.6	7.5	8.11	0.14	0.14	0.39	0.005	0.21	22	53	25	SIL
CD7051219-064	WP 19-1	24-32	0.50	59.7	8.2	1.0	1.1	2.5	2.78	0.049	0.50	17	38	45	C
CD7051219-065	WP 19-1	32-44	0.79	58.8	8.2	1.5	1.6	4.5	3.59	0.077	1.3	23	37	40	C - CL
CD7051219-066	WP 19-1	44-50	5.35	48.6	7.9	27	25	65	12.8	0.224	0.77	42	28	30	CL
CD7051219-067	WP 33-1	0-2	0.60	39.4	6.4	3.9	1.6	0.05	0.04	0.011	< 0.20	73	13	14	SL
CD7051219-068	WP 33-1	3-15	0.76	34.6	6.5	5.2	2.0	0.09	0.05	0.010	< 0.20	73	12	15	SL
CD7051219-069	WP 33-1	15-34	0.32	45.6	7.0	2.5	0.72	0.13	0.08	0.007	< 0.20	63	16	21	SCL
CD7051219-070	WP 33-1	34-44	0.62	44.2	7.1	5.6	1.7	0.19	0.10	0.005	< 0.20	59	19	22	SCL
CD7051219-071	WP 33-1	44-50	0.56	43.0	7.5	5.3	2.7	0.27	0.13	< 0.005	< 0.20	57	19	24	SCL
CD7051219-072	WP 35-1	0-2	0.74	45.3	6.2	4.0	3.3	0.13	0.07	0.011	< 0.20	45	24	30	SCL
CD7051219-073	WP 35-1	3-12	0.56	64.6	6.5	2.7	2.5	0.29	0.18	0.010	0.33	34	25	41	C
CD7051219-074	WP 35-1	12-17	0.60	63.4	7.8	3.5	3.5	1.1	0.58	0.005	0.21	18	37	45	C
CD7051219-075	WP 35-1	17-26	3.72	67.6	8.2	1.7	2.5	2.9	1.91	0.025	0.32	9.3	42	49	SIC
CD7051219-076	WP 35-1	35-42	3.79	68.0	8.2	1.4	2.4	3.9	2.66	0.060	0.51	11	43	46	SIC
CD7051219-077	WP 37-1	0-2	0.76	43.6	6.2	16	17	0.71	0.17	0.011	< 0.20	52	29	19	L
CD7051219-078	WP 37-1	3-7	0.45	39.0	6.2	1.6	2.4	0.47	0.33	0.020	< 0.20	45	22	33	CL
CD7051219-079	WP 37-1	7-15	0.79	79.5	6.7	3.5	4.3	1.1	0.61	0.015	0.25	13	35	51	C
CD7051219-080	WP 37-1	15-19	1.20	69.7	7.8	3.4	7.0	2.7	1.18	0.007	0.21	12	32	56	C
CD7051219-081	WP 37-1	19-28	3.60	69.7	7.8	22	42	6.1	1.09	0.044	0.73	13	30	57	C

LABORATORY ANALYTICAL REPORT

Client: Energy Metals Corp
Project: EM Moore Ranch Baseline Soils 4-32a
Workorder: CD7051219

Report Date: 06/28/07
Date Received: 05/24/07

		Analysis	EC SatPst	Saturation SatPst	pH SatPst	Ca SatPst	Mg SatPst	Na SatPst	SAR	Se-ASDTPA	B-CACL2	Sand	Silt	Clay	Texture
		Units	umhos/cm	%	s_u_	meq/L	meq/L	meq/L	unitless	mg/kg-dry	mg/kg-dry	%	%	%	
Sample ID	Client Sample ID	Depth	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results
CD7051219-362	WP 80-1	0-2	0.61	40.5	6.4	3.5	1.4	0.18	0.13	0.008	< 0.20	62	22	16	SL
CD7051219-363	WP 80-1	3-20	0.52	34.0	6.5	3.6	1.4	0.17	0.11	0.009	< 0.20	64	17	19	SL
CD7051219-364	WP 80-1	20-25	0.64	29.1	7.1	5.6	1.6	0.27	0.14	< 0.005	< 0.20	80	9.5	11	SL
CD7051219-365	WP 80-1	25-27	0.75	29.6	7.3	5.1	1.7	0.25	0.14	< 0.005	< 0.20	80	9.5	11	SL
CD7051219-366	WP 107-1	0-2	0.50	69.7	7.5	6.0	2.9	0.15	0.09	0.015	< 0.20	25	41	33	CL
CD7051219-367	WP 107-1	2-14	1.84	58.3	7.0	14	2.6	0.07	0.03	0.025	0.29	33	39	28	CL
CD7051219-368	WP 106-1	0-3	1.30	60.0	7.0	11	1.9	0.07	0.03	0.011	< 0.20	21	43	36	CL
CD7051219-369	WP 106-1	3-24	0.76	67.1	7.5	5.4	1.9	0.21	0.11	0.007	< 0.20	19	44	37	SICL
CD7051219-390	WP 106-1	24-30	0.42	79.5	7.8	2.6	1.9	0.22	0.15	0.010	< 0.20	13	45	42	SIC
CD7051219-391	WP 106-1	30-44	0.55	58.7	8.0	2.3	2.5	0.35	0.22	< 0.005	< 0.20	14	45	41	SIC
CD7051219-392	WP 106-1	44-50	0.66	61.4	8.0	2.3	3.7	0.82	0.49	0.005	< 0.20	17	46	37	SICL

LABORATORY ANALYTICAL REPORT

Client: Energy Metals Corp
Project: EM Moore Ranch Baseline Soils 4-22a
Workorder: C07051219

Report Date: 06/26/07
Date Received: 06/24/07

		Analysis	Coarse Frags	Organic Matter
		Units	%	%
Sample ID	Client Sample ID	Depth	Results	Results
C07051219-001	WP 116-1	0-2	4.3	2.9
C07051219-002	WP 116-1	3-12	4.1	
C07051219-003	WP 116-1	12-20	2.1	
C07051219-004	WP 116-1	20-24	5.9	
C07051219-005	WP 116-1	24-26	2.6	
C07051219-006	WP 117-1	0-3	2.9	4.4
C07051219-007	WP 117-1	3-10	3.7	
C07051219-008	WP 117-1	10-21	21	
C07051219-009	WP 117-1	21-32	8.9	
C07051219-010	WP 117-1	32-42	4.5	
C07051219-011	WP 117-1	42-50	4.2	
C07051219-012	WP 123-1	0-3	1.6	2.5
C07051219-013	WP 123-1	3-14	4.8	
C07051219-014	WP 123-1	14-20	4.6	
C07051219-015	WP 123-1	20-32	4.0	
C07051219-016	WP 123-1	32-44	3.9	
C07051219-017	WP 123-1	44-54	4.3	
C07051219-018	WP 123-1	44-54		
C07051219-018	WP 123-1	54-60	5.0	
C07051219-019	WP 126-1	0-2	2.2	4.2
C07051219-020	WP 126-1	2-10	3.5	
C07051219-021	WP 127-1	0-3	1.5	3.1
C07051219-022	WP 127-1	3-20	2.3	
C07051219-023	WP 127-1	20-27	5.5	
C07051219-024	WP 127-1	27-45	5.1	
C07051219-025	WP 127-1	45-51	3.5	
C07051219-026	WP 127-1	51-60	3.1	
C07051219-027	WP 300	0-4	1.0	2.9
C07051219-028	WP 300	4-20	2.3	
C07051219-029	WP 300	20-28	5.7	
C07051219-030	WP 300	28-40	4.1	
C07051219-031	WP 300	40-45	2.4	
C07051219-032	WP 301	0-2	1.6	5.8
C07051219-033	WP 301	2-15	1.6	
C07051219-034	WP 301	15-24	< 1.0	
C07051219-035	WP 301	24-35	< 1.0	
C07051219-036	WP 301	35-50	1.1	
C07051219-037	WP 301	50-60	< 1.0	
C07051219-038	WP 302	0-3	< 1.0	3.4
C07051219-039	WP 302	3-12	< 1.0	
C07051219-040	WP 302	12-20	1.6	

LABORATORY ANALYTICAL REPORT

Client: Energy Metals Corp
Project: EM Moore Ranch Baseline Soils 4-32a
Workorder: C07051219

Report Date: 06/28/07
Date Received: 05/24/07

Sample ID	Client Sample ID	Analysis	Coarse Frags	Organic Matter
		Units	%	%
		Depth	Result	Result
C07051219-341	WP 302	28-30	2.6	
C07051219-342	WP 302	30-48	1.7	
C07051219-343	WP 303	48-50	2.4	
C07051219-344	WP 303	0-2	2.1	3.4
C07051219-345	WP 303	3-10	5.2	
C07051219-346	WP 303	10-16	7.7	
C07051219-347	WP 304	0-2	1.8	3.5
C07051219-348	WP 304	3-20	4.9	
C07051219-349	WP 305	0-2	1.7	3.5
C07051219-350	WP 305	2-12	2.0	
C07051219-351	WP 305	12-20	4.7	
C07051219-352	WP 305	20-26	3.0	
C07051219-353	WP 306	0-2	1.4	3.8
C07051219-354	WP 306	2-20	16	
C07051219-355	WP 14-1	0-5	< 1.0	3.5
C07051219-356	WP 14-1	5-16	1.7	
C07051219-357	WP 14-1	16-31	2.6	
C07051219-358	WP 14-1	31-42	2.3	
C07051219-359	WP 14-1	42-51	1.4	
C07051219-360	WP 14-1	51-60	< 1.0	
C07051219-361	WP 19-1	0-3	< 1.0	3.5
C07051219-362	WP 19-1	3-20	10	
C07051219-363	WP 19-1	20-24	16	
C07051219-364	WP 19-1	24-32	4.4	
C07051219-365	WP 19-1	32-44	2.6	
C07051219-366	WP 19-1	44-50	5.7	
C07051219-367	WP 33-1	0-2	< 1.0	2.4
C07051219-368	WP 33-1	3-15	2.4	
C07051219-369	WP 33-1	15-34	1.6	
C07051219-370	WP 33-1	34-44	2.2	
C07051219-371	WP 33-1	44-50	2.7	
C07051219-372	WP 35-1	0-2	1.9	2.3
C07051219-373	WP 35-1	3-12	13	
C07051219-374	WP 35-1	12-17	12	
C07051219-375	WP 35-1	17-36	5.4	
C07051219-376	WP 35-1	36-42	5.1	
C07051219-377	WP 37-1	0-2	< 1.0	2.2
C07051219-378	WP 37-1	2-7	5.6	
C07051219-379	WP 37-1	7-15	21	
C07051219-380	WP 37-1	15-19	24	
C07051219-381	WP 37-1	19-28	14	

LABORATORY ANALYTICAL REPORT

Client: Energy Metals Corp
Project: EM Moore Ranch Baseline Soils 4Q2a
Workorder: C07051219

Report Date: 05/25/07
Date Received: 05/24/07

		Analysis	Course Frags	Organic Matter
		Units	%	%
Sample ID	Client Sample ID	Depth	Results	Results
C07051219-362	WP 82-1	0-3	1.6	2.5
C07051219-363	WP 82-1	3-20	1.5	
C07051219-364	WP 82-1	20-25	4.1	
C07051219-365	WP 82-1	25-37	2.6	
C07051219-366	WP 103-1	0-2	2.4	2.1
C07051219-367	WP 103-1	2-14	2.6	
C07051219-368	WP 103-1	0-2	2.7	4.1
C07051219-369	WP 103-1	3-24	4.2	
C07051219-390	WP 103-1	24-30	20	
C07051219-391	WP 103-1	30-44	4.1	
C07051219-392	WP 103-1	44-50	3.9	

ADDENDUM 2.6-E

PRIME FARMLAND DESIGNATION

Jamie Eberly
Plant Ecologist
BKS Environmental Associates, Inc.
P.O. Box 3467
Gillette, WY 82717

RE: Prime Farmland for Moore Ranch

Jamie,

I looked over the area for the Energy Metals Moore Ranch Corporation.

There is no prime farmland.

Douglas A. Gasseling

Douglas A. Gasseling, CPAg, CPESC, CCA
Conservation Agronomist
11221 East Highway 30
Cheyenne, WY 82009

2.7 HYDROLOGY

NUREG 1569 Section 2.7 states: "Characterization of the hydrology at in situ leach uranium extraction facilities must be sufficient to establish the potential effects of in situ operations on the adjacent surface water and groundwater resources and the potential effects of surface water flooding on the in situ leach facility" (US Nuclear Regulatory Commission). To meet these requirements, this section addresses surface water features (Section 2.7.1), groundwater characteristics (Section 2.7.2), surface water and groundwater quality (Section 2.7.3).

2.7.1 Surface Water

2.7.1.1 Drainage Basins

Delineation of drainage basins on the Moore Ranch Project area was previously conducted and presented to the NRC in the Environmental Report for the Sand Rock Mill Project, Docket No. 40-8743 (1980) and subsequent Draft Environmental Statement prepared by the NRC (1982). Those documents were referenced to provide the following drainage basin descriptions.

The project area lies entirely within the drainage basin of Ninemile Creek, which is a tributary to Antelope Creek. Antelope Creek flows into the South Cheyenne River (Wyoming nomenclature) which joins the Belle Fourche River in South Dakota to form the Cheyenne River. The Cheyenne River subsequently flows into the Missouri River. The entire Antelope Creek drainage basin is shown on Figure 2.2-4 and discussed in Section 2.2. Ninemile Creek tributaries which are relevant to the project are shown on Figure 2.7.1-1.

Antelope Creek has a drainage area of 980 square miles with an approximate channel length of 62 miles and an average gradient of 0.006 (ft/ft). The elevation at Antelope Creek's headwaters is approximately 6,225 feet above mean sea level (msl), and 4,400 feet at its confluence with the South Cheyenne River. The U.S. Geological Survey has a stream gaging station on Antelope Creek approximately ten miles upstream from its mouth. The drainage area is 959 square miles, at the gage.

Ninemile Creek has a total drainage area of 63 square miles, a channel length of approximately 20 miles, and an average channel gradient of 0.006 (ft/ft). The elevation difference from headwaters to mouth is 610 feet with a maximum basin elevation of approximately 5,500 feet above msl. The channel length within this area is approximately 10.5 miles with an average gradient of 0.007 (ft/ft).

Simmons Draw is a Ninemile Creek tributary flowing southeasterly through the project (Figure 2.7.1-1). Its total drainage area is 8.1 square miles. The channel length is 6.8 miles with an average gradient of 0.007 (ft/ft). Total basin elevation difference is 260 feet with a maximum elevation of approximately 5,475 feet above msl.

Pine Tree Draw, with a drainage area of 8.2 square miles, flows from the north into Ninemile Creek on the eastern edge of the project area (Figure 2.7.1-1). The channel length is approximately 7.6 miles, and the average gradient is 0.009 (ft/ft). The maximum basin elevation approaches 5,470 feet above msl, and the minimum is approximately 5,110 feet.

Simmons Draw has two tributaries which flow in a predominantly southerly direction in the project area. These tributaries are labeled Washes Nos. 1 and 2 on Figure 2.7.1-1. Wash No. 2 is further subdivided into Upper Wash No. 2 and Lower Wash No. 2 based on the channel reach being upstream and downstream of the proposed mining Wellfield 2. Wash No. 4, which is tributary to Ninemile Creek, is also further divided into Upper Wash No. 4 and Lower Wash No. 4 at the location of the proposed mill tailings evaporation pond dam.

Wash No. 1 has a drainage area of 1.7 square miles, a channel length of 2.8 miles, and an average channel gradient of 0.014 (ft/ft). The basin elevation difference is approximately 205 feet with a maximum elevation of 5,475 feet above msl.

Upper Wash No. 2 and Lower Wash No. 2 have drainage areas of 1.9 and 0.95 square miles, respectively. Their respective channel lengths are 3.1 and 2.2 miles with average gradients of 0.012 and 0.007 (ft/ft).

The drainage areas of Upper Wash No. 4 and Lower Wash No. 4 are 0.70 and 0.53 square miles respectively. Channel lengths are 0.46 and 1.3 miles with respective gradients of 0.017 and 0.013 (ft/ft).

Wash No. 3 (Figure 2.7.1-1) drains into Pine Tree Draw from the northwest in Section 36 of T42N-R75W. Its drainage area is 1.8 square miles, the channel length and average gradient are 3.2 miles and 0.014 (ft/ft), respectively, and the basin elevation difference is approximately 230 feet. The maximum basin elevation is approximately 5,480 feet above msl.

Drainage basin characteristics for Antelope Creek, Ninemile Creek, and all of the tributaries relevant to the Moore Ranch project area are summarized in Table 2.7.1-1.

Table 2.7.1-1 Drainage Basin Characteristics For The Moore Ranch Project Area

Drainage Basin	Drainage Area (mi^2)	Channel Length (mi)	Elevation Differences (ft)	Channel (ft/mi)	Gradient (ft/ft)
Antelope Creek (total)	980	62	1,825	29.4	0.006
Antelope Creek (at USGS gage)	959	52	1,775	34.1	0.006
Ninemile Creek (Total)	63	20	610	30.5	0.006
Ninemile Creek (@ 1-7)	34	10.5	390	37.1	0.007
Pine Tree Draw	8.2	7.6	370	48.9	0.0009
Simmons Draw	8.1	6.8	260	38.2	0.0007
Wash No. 1	1.7	2.8	205	73.2	0.014
Upper Wash No. 2	1.9	3.1	190	61.3	0.012
Lower Wash No. 2	0.95	2.2	80	36.4	0.007
Wash No. 3	1.8	3.2	230	71.9	0.014
Upper Wash No. 4	0.70	0.46	130	90.2	0.017
Lower Wash No. 4	0.53	1.3	90	69.2	0.013

2.7.1.2 Surface Water Runoff

Peak flood estimates for each of the drainage basins within and directly adjacent to the Moore Ranch Project area were previously calculated and presented to the NRC in the Environmental Report for the Sand Rock Mill Project, Docket No. 40-8743 (1980) and subsequent Draft Environmental Statement prepared by the NRC (1982). Those documents were referenced to provide the following runoff estimates. These estimates are considered valid.

In those reports, three techniques were utilized for estimating flood flows and volumes ephemeral basins for different recurrence intervals as described below.

- Lowham (1976) presented a basin characteristics technique whereby peak flow was related to drainage area with consideration of different regions in the state. Lowham's regression equations can be used for basins with drainage areas between 5 and 5,300 square miles. However, using a graphical approach, his technique can be used for basins slightly less than one square mile in area.

- For small basins (approximately 10 square miles and less) Craig and Rankl (1977) developed basin characteristics regression equations which utilize other basin parameters in addition to drainage area to compute peak flows and flood volumes (Craig and Rankl, "Analysis of Runoff from Small Drainages in Wyoming, US Geological Survey, Open-File Report 77-727, 1977).

- Also, for small basins, the U.S. Soil Conservation Service (SCS) has developed a technique to estimate peak flows and flood volumes. These techniques are published in their Engineering Field Manual (1969). The SCS technique utilizes peak rainfall values published by the U.S. Weather Bureau and then takes into consideration soil and vegetation characteristics and basin slope and drainage area to make the flood flow and volume estimates.

The technique presented in Lowham (1976) has since been superseded by Lowham, 1988, and subsequently by Miller, 2003. Therefore, the flood estimates calculated from the techniques in Lowham (1976) are not considered valid and are not presented in this report. The methods used in Craig and Rankl (1977) for analysis for small drainage basins in Wyoming (later published in Craig and Rankl, "Analysis of Runoff from Small Drainages in Wyoming, US Geological Survey, Water Supply Paper 2056, 1978) and the SCS method are considered valid techniques for estimating runoff as described in WDEQ-LQD Guideline 8.

Table 2.7.1-2 presents flood flow and volume estimates for the 2-year, 5-year, 10-year, 25-year, 50-year, and 100-year events. For comparison purposes, values obtained by utilizing the two techniques described above are tabulated.

Values listed in Table 2.7.1-2 under the SCS method were obtained using curve number 75 and 24-hour duration precipitation values from Miller and others (1973). Table 2.7.1-3 shows precipitation for selected recurrence intervals for different duration periods.

Table 2.7.1-2 Peak Flood Discharge Estimates for 5-, 10-, 25-, 50-, and 100-Year Recurrence Intervals for Drainages within the Moore Ranch Project Boundary

Drainage	Drainage Area (mi^2)	Craig and Rank's Method (CFS)					SCS Method (CFS)				
		5-year	10-year	25-year	50-year	100-year	5-year	10-year	25-year	50-year	100-year
Ninemile Creek	63	4,700	6,900	9,800	14,000	18,000					
Pine Tree Draw	8.2	1,100	1,600	2,200	3,100	3,900					
Simmons Draw	8.1	1,400	2,000	2,600	3,600	4,500					
Wash No. 1	1.7	410	580	770	1,100	1,310	150	250	350	450	550
Upper Wash No. 2	1.9	480	670	890	1,200	1,500	160	260	370	480	580
Lower Wash No. 2	0.95	500	640	770	990	1,200	100	150	240	310	360
Wash No. 3	1.8	400	560	760	1,000	1,300	160	260	360	470	570
Upper Wash No. 4	0.7	260	360	460	610	740	85	140	190	250	300
Lower Wash No. 4	0.53	270	350	440	570	670	70	110	150	210	250

Reference: Conoco, Inc. 1980. Environmental Report for the Sand Rock Mill Project, Campbell County, Wyoming, Docket No. 40-8743. July, 1980.

More recent peak discharge evaluations for similar drainages in the Powder River Basin were conducted to evaluate the performance of reconstructed stream channel reclamation at coal mines (Western Water Consultants, 1995). Rainfall-runoff simulations were based on the SCS triangular hydrograph method to estimate flood discharges for 10 and 100-year events. Flood discharge values calculated for drainage areas in Campbell County of similar size are shown to be relatively similar to 100-year flood discharge values for drainages within the Moore Ranch project area using the SCS method. Table 2.7.1-4 shows a comparison of the Moore Ranch 100-year flood estimates and 100-year flood estimates from similar size drainage basins evaluated in the Western Water Consultants, 1995 report.

Table 2.7.1-3 Precipitation Values for Selected Recurrence Intervals and Durations in the Moore Ranch Project Area (Inches)

Duration	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	500-Yr	Duration
5-Min	.25	.35	.42	.52	.59	.66	.83	5-Min
10-Min	.38	.54	.65	.80	.92	1.03	1.29	10-Min
15-Min	.48	.69	.83	1.01	1.16	1.30	1.64	15-Min
30-Min	.67	.95	1.14	1.40	1.61	1.81	2.27	30-Min
1-Hour	.85	1.21	1.45	1.78	2.03	2.29	2.87	1-Hour
2-Hour	.95	1.33	1.59	1.94	2.22	2.49	3.12	2-Hour
3-Hour	1.03	1.44	1.71	2.09	2.38	2.67	3.33	3-Hour
6-Hour	1.25	1.71	2.01	2.44	2.77	3.10	3.86	6-Hour
12-Hour	1.47	2.00	2.35	2.84	3.22	3.60	4.47	12-Hour
24-Hour	1.70	2.29	2.69	3.24	3.67	4.10	5.09	24-Hour

Table 2.7.1-4 Comparison of Moore Ranch Project SCS Method 100-year Flood Estimates with Recent Flood Estimates for Similar Size Drainage Basins in Campbell County

Drainage	Area (Square Miles)	SCS Method 100-year Peak Discharge (cfs)	Drainage	Area (Square Miles)	SCS Method 100-year Peak Discharge (cfs)
Wash No. 1	1.7	550	Russel Draw (05B0)	1.8	590
Upper Wash No. 2	1.9	580	Russel Draw (05B0)	1.8	590
Lower Wash No. 2	0.95	360	HA Creek Tributary (47C0)	1.03	351
Wash No. 3	1.8	570	Russel Draw (05B0)	1.8	590
Upper Wash No. 4	0.70	300	Lone Tree Prong (12B0)	0.68	279
Lower Wash No. 4	0.53	250	School Creek (64B0)	0.49	260

2.7.1.3 Surface Control Structures

Several small dams and ponds exist within and downstream of the project that provide a level of control and storage of surface water. Many of these water features may contain higher levels of water after spring runoff or after large precipitation events but are generally reduced to small, isolated pools or are completely dry by the end of the summer. Relatively small amounts of surface discharge from coal-bed methane operations may also maintain small pools of water in these ponds during dry summer months.

2.7.2 Groundwater

This section describes the regional and local groundwater hydrology, including hydrostratigraphy, groundwater flow patterns, hydraulic gradient and aquifer parameters.

The discussion is based on information from investigations performed within the Powder River Basin, data presented in previous applications and reports for the Moore Ranch Site, and the geologic information presented in Section 2.6. Regional and site baseline water quality conditions and local groundwater use are discussed in Sections 2.7.3 and 2.7.4, respectively of this application.

2.7.2.1 Regional Hydrogeology

The Moore Ranch site is located in the southwestern portion of the Powder River Basin, approximately 20 miles east of the north-flowing Powder River and approximately 50 miles north of Casper, Wyoming. Moore Ranch lies within the Northern Great Plains Aquifer System (USGS 1996). The Northern Great Plains Aquifer System contains overlapping aquifers in the Lower Tertiary, Upper and Lower Cretaceous, and Upper and Lower Paleozoic rocks. Figure 2.7.2-1 provides a generalized stratigraphic column of the hydrostratigraphic units of the Northern Great Plains Aquifer System. The Eocene Wasatch Formation, the stratigraphic unit that hosts the uranium mineralization of the Moore Ranch project, crops out over most of the License area (and most of the central portion of the Powder River Basin). The Oligocene White River Formation, which is commonly found in outcrop along the fringes of the Powder River Basin, has been eroded away in the Moore Ranch area. Occasional surficial deposits of the White River Formation are encountered in the vicinity of Pumpkin Buttes (north of the site), but these deposits are not a significant source of groundwater. Furthermore, Rankl and Lowry (1990) state that water from Quaternary alluvium in the Powder River Basin has not been developed extensively because better quality water occurs in the underlying Lower Tertiary and Upper Cretaceous (Wasatch-Fox Hills) sequence and large yields are generally not possible.

The Lower Tertiary aquifers are found within the Wasatch and Fort Union Formations, and the Upper Cretaceous aquifers are found within the Lance Formation and the Fox Hills Sandstone. The Lower Tertiary-Upper Cretaceous aquifer sequence (Wasatch to Fox Hills Sandstone) is about 1,350 feet thick in southeastern Montana and thickens to at least 7,000 feet in Converse County (south of the Moore Ranch Site) (Taylor 1968). The Lewis Shale is a regional aquitard that separates the Upper Cretaceous aquifers from the Lower Cretaceous aquifers.

The Lower Cretaceous aquifers include the Mesa Verde, Frontier and Cloverly Formations. Several regional aquitards are interlayered between these Cretaceous aquifers, including the Cody, Mowry and Thermopolis Shales. Figure 2.7.2-1 shows the stratigraphic relationship of the Lower Teritiary, Upper and Lower Cretaceous aquifers and the regional aquitards for the western portion of the Powder River Basin.

Historical studies have stated that regional groundwater systems (e.g., the Wasatch, Fort Union, and deeper aquifers) generally flow to the northern portion of the Powder River Basin and discharge via unknown locations in Montana (Lowry & Wilson, 1986, and Rankl & Lowry, 1990). A generalized potentiometric surface map for the Lower Tertiary units of the Northern Great Plains Aquifer system is shown in Figure 2.7.2-2. The hydraulic communication between the aquifer systems has been reported to vary from none to direct. Groundwater flow direction in sediments near outcrop areas generally has been characterized as toward the center of the Powder River Basin.

On a semi-regional scale, groundwater flow occurs to the north-northwest, and the gradient is on the order of 0.004 to 0.006 ft/ft. This groundwater flow direction is consistent with results of numerous studies (Honea, 1974; Morris & Bahr, 1975; NRC, 1978; Rose, 1971). In the vicinity of Moore Ranch, flow in the shallow groundwater system is north to northwesterly, toward the Powder River.

Regional recharge to the Lower Tertiary aquifers in the vicinity of the Moore Ranch Project generally occurs at the formation outcrops along the western and southern edges of the Powder River Basin, associated with the Casper Arch and Laramie Mountain uplifts. Some recharge to the shallower aquifer systems is also derived from localized infiltration of precipitation. As described under the section on geology, sands that contain the uranium mineralization at Moore Ranch (70 Sand) crop out within a mile to the southeast of the License Area. These outcrops are localized recharge zones for the Wasatch aquifers within the Moore Ranch License Area.

For purposes of this application, only hydrogeologic units of Lower Tertiary/Upper Cretaceous age are described with respect to general hydrologic properties and potential for groundwater supply. Units deeper than the Fox Hills Sandstone and beneath the Lewis Shale are generally too deep to economically develop for water supply or have elevated TDS concentration that renders them unusable for consumption. Exceptions to this can be found along the edges of the basin, where Lower Cretaceous and older stratigraphic units are found in outcrop. Near outcrop areas, Lower Cretaceous and Paleozoic units can provide relatively good quality water. In particular, the Mesaverde Formation, Frontier Formation, Madison Limestone and Tensleep Sandstone can produce large quantities of relatively good quality water. However those outcrop locations are tens of miles from the Moore Ranch site. In the vicinity of Moore Ranch, the Lower Cretaceous and Paleozoic rocks are separated from the Wasatch Formation by over 5,000 feet of sediments.

Units younger than Lower Tertiary are typically not present within the vicinity of Moore Ranch and therefore are of no significance with respect to groundwater supply. Hydrologic units of interest within the southwest Powder River Basin are shown on the stratigraphic column in Figure 2.7.2-1 from deepest to shallowest:

- Lewis Shale (Late Cretaceous)
- Fox Hills Sandstone (Late Cretaceous)
- Lance Formation (Late Cretaceous)
- Fort Union Formation (Paleocene)
- Wasatch Formation (Eocene)

Discussion of the regional characteristics for each of these hydrostratigraphic units is provided below.

Lewis Shale

The Lewis Shale underlies the Fox Hills Sandstone and is generally considered the major aquitard between the Upper and Lower Cretaceous aquifer systems in the Powder River Basin. This unit is described by Hodson et al. (1973) as predominately shale with sandy shale zones and lenses of fine-grained sandstone. Thickness of this unit is approximately 450 to 500 feet in the southwest part of the basin. Small quantities of water may be available from the thin sandstone beds within this unit near the margins of the basin. However most of this formation does not yield water (Hodson 1973).

Fox Hills Sandstone

The Fox Hills Sandstone is the basal aquifer unit within the Lower Tertiary/Upper Cretaceous aquifer sequence in the Powder River Basin. The Fox Hills Sandstone consists of fine to medium grained sandstone beds deposited in a marine environment. The Fox Hills Sandstone is described by Weimer (1961) as a lithogenetic unit consisting of a series of individual sands bodies, sometimes several miles wide and hundreds of miles long. The Fox Hills Sandstone has been recognized in the northwestern part of the basin, but is generally poorly developed and unmapped along the western side of the basin (Gill 1966). The Fox Hills Sandstone is approximately 700 feet thick in the west part of the basin (Horn 1955) but is often undifferentiated from the overlying Lance Formation in west and northwest parts of the basin (Hose1955).

Because of the disconnected nature of the individual sand bodies, hydraulic head data is not sufficient to define a potentiometric surface for a specific horizon within the Fox Hills Sandstone (Rankl 1990). Wells completed in the Fox Hills Sandstone have yields that typically range from 5 to 50 gallons per minute. Locally, this formation can yield over 200 gallons per minute, although lower yields are typically available in the western portion of the basin (Hodson 1973). Flowing artesian conditions (75 gpm) were present in a well in Campbell County, completed at a depth of 2,000 feet.

Lance Formation

Overlying the Fox Hills Sandstone is the Lance Formation. The Lance Formation consists predominately of very fine-to fine-grained lenticular, clayey, calcareous sandstone. Shale, coal and lignite beds are present within the formation, which has a typical thickness of 1,000 to 3,000 feet (Conoco 1982). Wells completed in the Lance Formation generally yield less than 20 gpm and most wells are drilled in outcrop areas for domestic and stock purposes. Because few wells are completed in this formation out toward the center of the basin, potentiometric surface data are limited. It is assumed that the direction of groundwater flow is generally to the north, similar to that of the overlying Fort Union and Wasatch Formations.

Fort Union Formation

The Paleocene Fort Union Formation is stratigraphically between the Lance Formation and the overlying Wasatch Formation, reaching a maximum thickness of approximately 3,500 feet within the Powder River Basin. The Fort Union Formation is described as continental and shallow non-marine deposits of sandstone, carbonaceous shale and coal. Outcrops of the Fort Union Formation encircle most of the basin and the beds dip basinward. This formation is a major source of coal within the Powder River Basin and the United States and is extensively exploited for coal bed methane reserves.

Water is generally produced from sandstone, jointed coal and clinker beds with maximum yields on the order of 150 gpm. Specific capacities determined from wells completed in the Fort Union Formation within the Powder River Basin are generally less than 1 gpm per foot of drawdown (Lowery 1966, and Whitcomb 1964).

The hydraulic gradient of the Fort Union and Wasatch aquifers in the vicinity of Moore Ranch is reported as 0.0014 ft/ft to the north-northwest by Conoco (1982).

Wasatch Formation

The Wasatch Formation is described as an arkosic fine- to coarse-grained sandstone with siltstone, claystone and coals. The Wasatch Formation was deposited as a mixture of alluvial, fluvial and paludal environments. The contact between the Fort Union Formation and the Wasatch Formation is gradational in the vicinity of Moore Ranch and is generally arbitrarily set at the top of the thicker coals or thick sequence of clays and silts (Conoco 1982). The boundary between the two formations was considered by Conoco to be the top of the Roland Coal. Maximum total thickness of the Wasatch Formation is greater than 1,000 feet (800 to 1,100 feet in the License Area). In the southern portion of the Powder River Basin, the Wasatch Formation generally dips to the northwest at 1.0 to 2½ degrees. The sandstones that contain the uranium mineralization

are generally coarse cross-bedded arkosic sand deposited in a high-energy fluvial environment. Individual channel sand units are generally oriented northward.

There are commonly multiple water-bearing sands within the Wasatch Formation. Groundwater within the Wasatch aquifers is typically under confined (artesian) conditions, although locally unconfined conditions exist. Hodson et al (1973) reported that wells completed in the Wasatch typically yield 10 to 50 gpm in the north part of the basin but yields are generally greater in the south part of the basin with yields as high as 500 gpm possible. Specific capacities of wells completed in the Wasatch Formation are usually greater than for wells completed in the underlying aquifers. Specific capacities of 4 to 15 gpm/ft of drawdown were reported by Hodson et al. (1973).

As reported by Rankl and Lowry, most data available to describe aquifers in the Wasatch/Fox Hills sequence are from stock and domestic wells that are generally completed in small intervals of single formations at depths of less than 500 feet. There is large topographic relief in the area and because these wells are completed in sandstone aquifers at differing depths, hydraulic head data are generally not representative of a single continuous stratigraphic horizon and are not sufficient to provide potentiometric surfaces extending over great distances. The overall groundwater flow system in the shallow aquifers in the vicinity of Moore Ranch is toward the Powder River to the north-northwest. However, the aquifer systems are often locally controlled by stratigraphy and topography and attempts to confidently extend potentiometric surface data for any significant distance is difficult.

2.7.2.2 Site Hydrogeology

Groundwater

EMC has been collecting lithologic, water level, water quality, and pump test data as part of its ongoing evaluation of hydrologic conditions at the Moore Ranch Project. In addition to recent data acquisition, historic data collected for Conoco (1982) was used to support this evaluation. Drilling and installation of borings and monitor wells is ongoing in order to provide additional data to further refine the site hydrologic conceptual model. Water level measurements, both historic and recent, provide data to assess potentiometric surface, hydraulic gradients and inferred groundwater flow directions for the aquifers of interest at the Moore Ranch Project, at least on a localized scale. Recently completed pump tests by EMC and Petrotek Engineering Corporation (PEC 2007) as well as the pump tests conducted by Conoco (1982), were used to evaluate hydrologic properties of the aquifers of interest and to assess hydraulic characteristics of the confining units.

Figure 2.7.2-3 shows the monitor wells (current and historic) that were used in the site hydrologic evaluation. Table 2.7.2.1 provides data for those wells to the extent available.

Hydrostratigraphic Units

EMC has adopted the nomenclature used by Conoco (1982) for the hydrostratigraphic units of interest within the Moore Ranch Project. Sands above the Roland Coal are numbered, increasing upward. The 40 and 50 Sands are regionally extensive sands that are considered significant aquifers. The primary Production Zone is identified as the 70 Sand. The 70 Sand is bounded above and below by areally extensive confining units. Overlying the upper confining unit is the 72 Sand. The 72 Sand is considered the overlying aquifer to the Production Zone. The shallowest occurrence of groundwater within the License area occurs within the 72 Sand. Beneath the lower confining unit is the 68 Sand. Although the 68 Sand is considered the underlying aquifer to the Production Zone, it is in communication with the 70 Sand in parts of the License Area. The 68 Sand also appears to coalesce with the underlying 60 Sand in portions of the License Area. Figure 2.7.2-4 depicts the hydrostratigraphic relationship of these units.

A brief description of each hydrostratigraphic unit follows, from shallowest to deepest.

72 Sand (Overlying Aquifer)

The 72 Sand (overburden above the 70 Sand) consists of a 50- to 250-foot thick sequence of clays, silts, discontinuous sandstones and alluvial sediments. The alluvial sediments are limited to the low-lying areas of surface drainages. A lignite marker bed, designated the "E" coal, is present across the site below the 72 Sand. As previously described, the 72 Sands are discontinuous and, when saturated, generally represent perched water conditions. Figure 2.6-12 is an isopach of the overburden thickness in the vicinity of the ore bodies. The 70 Sand is considered the uppermost continuous water-bearing unit within the License area.

The first potential aquifer overlying the Production Zone is the 72 Sand. The top of the 72 Sand occurs at depths of approximately 30 to 200 ft below ground surface (bgs) within the Moore Ranch License Area. The total thickness of the sand ranges from 5 to 90 feet. This sand is discontinuous across the License area, pinching out to the west-southwest. The 72 Sand is unsaturated over the southern portion of the License Area. In areas that saturated conditions exist within the 72 Sand, this unit is considered the overlying aquifer to the Production Zone aquifer.

Upper Mudstone, E Coal and Lower Mudstone-Upper Confining Unit

Underlying the 72 Sand is a sequence of mudstone, shale and lignite. A persistent, laterally extensive lignite seam was identified by Conoco as the E Coal. The E Coal is located a few feet above the top of the 70 Sand and is a consistent marker bed for the

License Area. The units above and below the E Coal were designated by Conoco as the Upper and Lower Mudstone, respectively. The sequence of Upper Mudstone, E Coal and Lower Mudstone are collectively considered the Upper Confining Unit to the Production Zone. Although the E Coal has some intrinsic permeability, its limited thickness (typically 3 feet or less) and limited extent of saturation precludes its use as a source of groundwater supply.

In some instances, saturated conditions have been found to exist in wells completed in shallower sands above areas where the upper portion of the 70 Sand is unsaturated indicating that, at least locally, perched water is present.

70 Sand (Production Zone Aquifer)

The 70 Sand contains uranium mineralization and is the production zone at the Moore Ranch Project. The total thickness of the 70 Sand ranges from 40 to 120 feet, but is typically 60 to 80 feet, (Figure 2.6-9). The top of the 70 Sand ranges from approximately 100 to 330 ft bgs within the Moore Ranch License Area. This hydrostratigraphic unit is areally extensive (except to the south where it crops out) and dips to the northwest at less than one degree. The 70 Sand is present in outcrop or under a thin veneer of alluvium and topsoil just south of the License area over large portions of section 11 and 12 of T41N and R75W and Sections 6 and 7 of T41N and R74W. The area of 70 Sand outcrop is a recharge zone for the production zone aquifer. Water entering the 70 Sand in this recharge area would flow north-northwest across the License Area.

The 70 Sand aquifer occurs generally under unconfined conditions in the project area. The 70 Sand aquifer in Wellfields #1 and #3 occurs mostly under unconfined conditions and has adequate hydrostratigraphic confinement between the production sand and/or the overlying/underlying sands. In Wellfield #2, the 70 Sand aquifer occurs under unconfined conditions and for the most part has adequate hydrostratigraphic confinement between the 70 Sand and overlying/underlying sands. However, lack of hydrostratigraphic confinement between the 70 Sand and the underlying 68 Sand occurs in the eastern/northeastern part of Wellfield #2. Additional mine-unit scale testing will provide data necessary to validate the approach for mining and monitoring this section of Wellfield #2. In the south part of the License Area, the 70 Sand is the shallowest occurrence of groundwater (although perched conditions may exist locally in some of the overlying sands and coals). The underlying aquifer to the 70 Sand is the 68 Sand.

Lower Confining Unit

Beneath the 70 Sand is a sequence of clays and silts ranging from 0 to 50 feet thick. The clay/silt sequence is absent in the area of monitor well UMW-2 where the 70 and 68 Sands coalesce.

68 Sand (Underlying Aquifer)

The 68 Sand is present beneath the Lower Confining Unit and in some areas in contact with the 70 Sand. The 68 Sand is typically 40 to 60 feet thick but can reach over 75 feet in thickness (Figure 2.6-8).

Unnamed Shale Unit

The unnamed shale at the base of the 68 Sand has not yet been fully characterized. This unit is generally 5 to 30 feet thick.

60 Sand

The 60 Sand is generally the first sand unit underlying the 68 Sand. In areas where the 70 and 68 Sand coalesce, the 60 Sand may be considered the underlying aquifer to the production zone aquifer. The 60 Sand is approximately 100 feet thick and is continuous throughout the area. It is separated from the underlying 50 sand by about 80 feet of shale or mudstone with some interspersed sandstone lenses. Additional borings are being drilled to evaluate the geologic and hydrologic characteristics of this hydrostratigraphic unit.

Potentiometric Surface, Groundwater Flow Direction and Hydraulic Gradient

The EMC hydrologic evaluation of the Moore Ranch Project included measurement of water levels in monitor wells completed in the 70 Sand (production zone), the overlying aquifer (72 Sand) and the underlying aquifer (68 Sand) to assess the potentiometric surface, groundwater flow direction and hydraulic gradient of those units. Additional historic water level data were available from the Conoco hydrologic evaluation of the site (1982). Table 2.7.2-2 lists water level data recorded for the site monitor wells.

The potentiometric surface for the production zone is shown on Figure 2.7.2-5. Water level data used to develop the potentiometric surface map were collected on February 14, 2007. Based on those data, the direction of groundwater flow within the 70 Sand is predominantly to the north, generally consistent with the regional flow system. The horizontal hydraulic gradient calculated from this data is approximately 0.0040 ft/ft (21.1 ft/mile).

Water levels collected from the overlying aquifer (72 Sand) in February 2007 indicate a similar northerly groundwater flow direction as for the 70 Sand aquifer, although the data are sparse (Figure 2.7.2-6). The horizontal hydraulic gradient calculated from the data for the 72 Sand aquifer is approximately 0.0039 ft/ft (20.4 ft/mile).

Figure 2.7.2-7 represents the potentiometric surface for the 68 Sand based on water levels measured in February 2007. Although the general direction of groundwater flow is also to the north, the horizontal hydraulic gradient calculated for the 68 Sand (0.0005 ft/ft [2.6 ft/mi]), is much flatter than for the 70 and 72 Sands.

Vertical hydraulic gradients were determined by measuring water levels in closely grouped wells completed in different hydrostratigraphic units. Figure 2.7.2-8 shows the location of the well groups used for the assessment of vertical hydraulic gradients. Table 2.7.2-3 summarizes the calculated vertical gradients between the 72, 70 and 68 aquifers. The potentiometric surface of the 70 Sand ranges from 50 to 60 feet lower than the potentiometric surface of the overlying 72 Sand at the grouped wells, suggesting that the overlying aquifer and the production zone aquifer are not in hydraulic communication. Vertical hydraulic gradients range from approximately 0.6 to 0.9 ft/ft between the 72 and 70 Sand aquifers and consistently indicate decreasing hydraulic head with depth (downward potential). A downward potential is indicative of an area of recharge, as opposed to an upward potential that is normally indicative of an area of groundwater discharge.

The vertical gradient between the 70 and 68 Sand aquifers is minimal at two of the well groups (MW1 and MW2). There may be hydraulic communication between the aquifers at these locations. This is consistent with earlier observations that the 68 and 70 Sands coalesce in places within the License Area. At the MW4 well group, there is a 5 to 10 foot head difference between the 70 and 68 Sand aquifers (decreasing with depth). In the area of the MW4 well group, the shale unit between the 70 and 68 Sand is 25 to 40 feet thick. The thickness of the shale unit, coupled with the large head difference indicates that the 68 and 70 Sand aquifers are not in direct hydraulic communication at this location. The vertical hydraulic gradient between the 68 and 70 Sand aquifers is variable at the MW3 well group location. Recent data, collected in June and July of 2007, indicate that the potentiometric heads are higher in the 70 Sand aquifer (at well MW3) by 10 to 20 feet. Data collected in February 2007 indicated the potentiometric heads in the 68 Sand aquifer (well UMW3) were higher than the heads in the 70 Sand aquifer by 7 to 10 feet. The water levels in the 70 Sand aquifer remained relatively constant throughout the year but changed by as much as 25 feet in the 68 Sand aquifer at UMW3. The cause for the large fluctuation in water levels in the 68 Sand at well UMW3 is unknown. Well UMW-3 experienced steady drawdown since early February of 2007. Approximately 25 feet of water level decline was observed until mid-August, when the well began to show recovery trend with the water level rising approximately 10 feet. None of the other underlying 68 Sand wells in the project area showed this declining trend and only showed fluctuations of a few feet. Investigation has not revealed the cause of the declining water levels. CBM operations in the area are not likely the cause due to the depth and lower flows of the wells. Use of a shallow well in the area for CBM drilling water has not been ruled out, but field inspection in the area has not verified this.

Water levels in this well will continue to be closely monitored.

Aquifer Properties

Hydrologic properties for the Wasatch aquifers within the Moore Ranch Project area are estimated from historic and recent pumping tests. Dames & Moore conducted an initial investigation (1978) for Conoco of the hydrologic properties within the Wellfield 1 and Wellfield 2 ore bodies. Conoco performed additional hydrologic evaluation in 1982 to determine the feasibility of in-situ and/or open pit production of those uranium ore bodies.

Historic Pump Tests

A series of aquifer tests were conducted on the Moore Ranch project from 1977 through 1980 to assess hydraulic characteristics of the production zone as well as overlying and underlying hydrostratigraphic units. Initial testing was performed by Wyoming Water Resources Research Institute (WWRI). Dames & Moore's assessment of the initial testing was that the results were unsatisfactory because of improperly developed wells, inadequate water level measurements and inappropriate analysis methods (Dames & Moore, 1978). Conoco redeveloped the wells using airlift pumping. Data collected during development of the wells were analyzed by Conoco to determine aquifer characteristics; additional pump tests also were conducted and analyzed by Conoco. A summary of the Conoco tests that were conducted to assess conditions within the ore bodies at Moore Ranch is presented below. Information on the pumping wells and observation wells utilized in the pump tests are provided in Table 2.7.2-1 and the locations of the wells are shown on Figure 2.7.2-9.

- A pumping test was conducted on 8/17/77 at well 885 with wells 886, 887 and 888 as observation wells. These wells are located within the Wellfield 1 orebody. Well 885 was pumped for 1 day (1440 minutes) at a rate of 3.4 gallons per minute (gpm). Observation wells 886, 887 and 888 were located 64, 115 and 50 feet, respectively, from the pumping well. Drawdown in the observation wells at end of test for 886, 887 and 888 were 0.74, 0.76 and 1.94 feet, respectively. All wells are completed within the 70 Sand except for well 887, which is completed in the 68 Sand. The response of well 887 during the pumping test indicates the possibility that there is hydraulic communication between the 70 and 68 Sands in the vicinity of the Wellfield 1 orebody. The Conoco Mine Permit Application states that the seal between the sands in well 887 was questionable.

- The previously described wells were redeveloped using airlift methods. Recovery following redevelopment was recorded at wells 886 and 887. The effective

pumping rate was 2 gpm for 886 and 0.1 gpm for 887 with 0.7 and 12 feet of drawdown, respectively.

- A pumping test was conducted within the Wellfield 2 orebody on 6/25/78. Well 1 was pumped at 3.5 gpm for 140 minutes. Observation wells 1805 and 1806, located 36 and 73 feet, respectively from the pumping well, had measured drawdown of 0.71 and 0.54 feet at the end of the test. The pumping well and the observation wells are all completed within the 70 Sand.

- A second pumping test was conducted at Well 1 on 6/25/78 to evaluate hydraulic communication with the 68 Sand within the Wellfield 2 orebody. Well 1 was pumped at 2.5 gpm for 170 minutes. Observation well 1807 is located 111 feet from pumping well and completed within the 68 Sand. Drawdown of 0.37 feet was measured at well 1807 at the conclusion of the pumping test. The test results indicate that there may be hydraulic communication between the 70 and 68 Sand within the Wellfield 2 orebody. However, the Conoco Mine Permit Application indicates the results are inconclusive based on concerns regarding the integrity of the well completion in 1807.

- Well 1814, located within the Wellfield 3 orebody, was pumped at 19 gpm for 1140 minutes beginning on 12/1/78. A maximum drawdown of 1.87 feet was measured at well 1816, located 55 feet from pumping well. Both the pumping and observation wells are completed within the 70 Sand.

- Well 1823 was pumped for 70 minutes at 1.7 gpm on 5/22/80. Well 1823 is located within the Wellfield 3 orebody and is completed in the 68 Sand. Over 6 feet of drawdown was measured in that well during the test. Water levels were also measured in observation well 1816 during the test. Well 1816 is located 70 feet from 1823 and completed in the 70 Sand. Water levels in well 1816 showed a slight increase during the pumping test, indicating a possible lack of hydraulic communication in that area between the 68 and 70 Sands.

- Well 1814, located in the Wellfield 3 orebody, was pumped at an average rate of 16.8 gpm over 3,100 minutes, beginning on 8/13/80. Maximum drawdown at the pumping well was 32 feet. The maximum drawdown in the well occurred approximately 1170 minutes into test. The pumping rate gradually decreased after that time (from 17.1 gpm to 15.8 gpm) and the water levels showed slight recovery during the latter portion of the test. Water levels were recorded during the test at observation wells 1816, 1815, 1817, and 1823, located 34.5, 89, 228 and 75 feet from the pumping well, respectively. All of the wells are completed in the 70 Sand except for 1823, which is completed in the 68 Sand. Maximum drawdown measured in the 70 Sand observation wells was 2.87 feet (1816), 1.3

feet (1815) and 0.2 ft (1817). Water levels in well 1823 did not show any drawdown, again indicating hydraulic separation between the 68 and 70 Sand in the vicinity of Wellfield 3 orebody.

Results of the tests were variable with the highest transmissivity and hydraulic conductivity values determined for the Wellfield 3 orebody. The results from the aquifer tests are summarized in Table 2.7.2.4. Based on internal review of the data by PEC, representative values are presented in the table along with the range.

Table 2.7.2-4 Summary of Conoco Pump Test Results – 68 and 70 Sand
Moore Ranch Project

	Range of Values	*Representative Value*
Wellfield 1-Orebody		
Transmissivity (T; ft^2/d)	23 to 240	110
Hydraulic Conductivity (k; ft/day)	0.38 to 4.0	1.9
Net Sand Thickness (h; ft)	60	60
Storativity (S)	5.3×10^{-6} to 2.9×10^{-3}	9.8×10^{-4}
Wellfield 2-Orebody		
Transmissivity (T; ft^2/d)	112 to 297	165
Hydraulic Conductivity (k; ft/day)	0.95 to 1.52	1.4 ft/d
Net Sand Thickness (h; ft)	80	80
Storativity (S)	8.0×10^{-5} to 5.2×10^{-4}	2.5×10^{-4}
Wellfield 3-Orebody		
Transmissivity (T; ft^2/d)	374 to 735 ft^2/d	555
Hydraulic Conductivity (k; ft/day)	9.35 to 18.3	13.8
Net Sand Thickness (h; ft)	40	40
Storativity (S)	3.2×10^{-4} to 4.3×10^{-3}	1.4×10^{-3}
Specific Yield	0.01 to 0.058	0.032

Note: The 70 Sand is only partially saturated in the vicinity of the Wellfield 3 ore-body

Additional testing was performed by Conoco in an area to the southeast that was selected as a potential site for evaporation ponds. The purpose of that testing was primarily to assess hydraulic characteristics of the near-surface soils with respect to suitability for pond placement.

Limited data (e.g., laboratory analyses or detailed pump test data) regarding the vertical hydraulic conductivity of the confining units are available for the Moore Ranch Project area. However, the data from other ISR operations in the Powder River Basin (COGEMA Mining Corporation and Power Resources Inc) appear to be reasonably analogous to

Moore Ranch. In this regard, the COGEMA and PRI data indicate the vertical hydraulic conductivity of clays/shales in the Wasatch is on the order of 10^{-7} to 10^{-11} cm/sec (10^{-4} to 10^{-7} ft/d).

2007 Pump Tests

In February 2007, EMC and PEC initiated a pump test designed to accomplish the following objectives:

1. Demonstrate hydraulic communication between the production zone (70 Sand) pumping well and the surrounding monitor wells;
2. Assess the hydrologic characteristics of the production zone aquifer within the test area;
3. Evaluate the presence or absence of hydrologic boundaries in the production zone within the project area; and,
4. Demonstrate sufficient confinement between the production zone and the overlying and underlying sands for the purposes of ISR mining.

The limited historic data (Conoco) suggested it might be possible to test the entire Moore Ranch Project Area in one test (e.g., by pumping from only one well). For this reason, the pumping well (PW-1) was centrally located between the ore bodies and installed specifically for use as a pumping well. However, based on the results from the first test that indicated greater than anticipated transmissivity and hydraulic conductivity, two additional pump tests were conducted. Table 2.7.2.1 provides basic well information for the pumping wells and observation wells used in the tests. Table 2.7.2.5 summarizes the pump test parameters. The location of pumping wells and observation wells are provided in Figure 2.7.2.10. Details regarding the pump test procedures and results are provided in Appendix B.

Table 2.7.2-5 Summary of Moore Ranch 2007 Pump Test Parameters					
Test No.	*Pumping Well*	*Duration (minutes)*	*Duration (days)*	*Flow Rate (gpm)*	*Comments*
1	PW-1	14,285	9.9	15.6	20.6' drawdown in PW1; only other response observed was in MW-1 (distance of 109')
2	MW-2	1,465	1.0	26.0	19.4' drawdown in MW-2; response in Well 1805 (70 Sand, distance of 346'); UMW-2 (68 Sand; distance of 10'), 1807 (68 Sand; distance of 252')
3	MW-3	5,535	3.8	14.4	17.8' drawdown in MW-3; no response in any other monitor wells

Transmissivity (T) results from the analysis for the 70 Sand range from 321 to 711 ft^2/d, with an average value of 586 ft^2/d. Based on an average thickness of 80 feet, the average hydraulic conductivity (K) is 7.3 ft/d. Assuming a water viscosity of 1.35 cp (50 degrees F) and a density of 1.0, this equates to a permeability of approximately 2,000 millidarcies (md). The only storativity (S) was obtained from MW-1 at a value of 4.4×10^{-3}. Details of the methods of analysis of the pump tests and the results are discussed in Appendix B. Table 2.7.2-6 provides a summary of the aquifer properties estimated from the recent pump test results.

Table 2.7.2-6 Summary of Aquifer Properties Estimated From Recent Pump Test Results	
Pump Test	**Representative Value**
Central Location Between Wellfields 1, 2 and 3 (PW-1 Test)	
Transmissivity (T; ft2/d)	656.5
Hydraulic Conductivity (k; ft/day)	8.87
Net Sand Thickness (h; ft)	77
Storativity (S)	4.39×10^{-3}
Wellfield 1 Test (MW-3)	
Transmissivity (T; ft2/d)	321
Hydraulic Conductivity (k; ft/day)	4.46
Net Sand Thickness (h; ft)	72
Storativity (S)	NA
Wellfield 2 Test (MW-2)	
Transmissivity (T; ft2/d)	711
Hydraulic Conductivity (k; ft/day)	7.33
Net Sand Thickness (h; ft)	97
Storativity (S)	NA

All results are with respect to the Production Zone Aquifer (70 Sand)

No water-level change of significance was observed in the overlying OMW-1 or underlying UMW-1 completions as a result of pumping the PW-1 well completed in the 70 Sand. The UMW-1/OMW-1 wells are located approximately 109 feet from PW-1. No changes of significance were observed in the overlying monitor well during the MW-2 pump test. Well OMW-2 declined slightly during the pumping period, however, the decline continued during recovery. Underlying completions UMW-2 and 1807 (completed in the 68 Sand 252 feet distant) directly responded to pumping, which is expected as the 70 and 68 Sands coalesce in that area.

No significant change in water level was observed in OMW-3 (overlying completion) during the MW-3 pump test. The underlying well (UMW-3) declined steadily during the background monitoring, pumping, and recovery periods (Appendix B, Figure 5-15). The declining trend in UMW-3 continued through July of 2007, but has since shown a recovering trend. As discussed previously, the cause of the decline is not known; however, long-term monitoring data clearly indicate that the decline was not a result of the MW-3 pump test and has not had an impact on water levels in MW-3.

As previously discussed, the potentiometric surface of the overlying 72 Sand is approximately 50 feet higher than the 70 Sand. This difference in potentiometric surfaces supports the testing data that demonstrate isolation between the 72 and 70 Sands.

The difference in potentiometric surface between the 68 and 70 Sand is variable across the site, indicating a downward gradient in some areas and upward gradient in others. There is very little difference in potentiometric heads in the vicinity of MW-2/UMW-2 where coalescing of the 68 and 70 Sands occurs.

The test results demonstrate that:

- The 70 Sand monitor wells located in the near proximity to the pumping well are in communication, indicating that the 70 Sand production zone has hydraulic continuity. While communication was not exhibited over the entire area, geologic information clearly shows that the 70 Sand is a contiguous sand body across the Moore Ranch Project Area. Additional (mine unit) scale testing required by NRC and WDEQ will demonstrate communication throughout each mine unit between the pumping well(s) and the monitor well ring;

- To adequately stress the 70 Sand, future pump tests may need to incorporate larger-diameter (e.g., 6- or 8-inch) completions to accommodate a 6-inch pump.

- On a regional scale, the 70 Sand has been adequately characterized with respect to hydrogeologic conditions within the test area at the Moore Ranch Project Area;

- Adequate confinement exists between the 70 Sand production zone and the overlying 72 Sand throughout the Moore Ranch Project Area;

- Adequate confinement exists between the 70 Sand production zone and the underlying 68 Sand throughout the northern and western portions of the Moore Ranch Project Area. Where the 68 and 70 Sands coalesce in the center of Section 35, mining operations will be designed to account for this variation in geology and mine-unit scale testing will demonstrate the validity of the recommended approach(s); and,

- Sufficient testing has been conducted to date at Moore Ranch to proceed with a Class III UIC permit application and a NRC license application.

2.7.3 Site Baseline Water Quality

2.7.3.1 Surface Water Quality

As described in Section 2.2.2, water quality data were available from one USGS stream gage (06364700) located on Antelope Creek near Teckla, WY from October 3, 1977 through September 7, 2005. Water quality data analyses revealed a mean temperature of 10.4 degrees Celsius (°C) and a range from 0 to 30 °C. Mean dissolved oxygen was 7.8 milligrams/Liter (mg/L) and ranged from 2.8 to 11.7 mg/L. Total nitrogen averaged 0.55 mg/L and ranged from 0.21 to 1.8 mg/L. Mean ammonia as nitrogen concentrations were 0.04 mg/L and ranged from 0 to 0.13 mg/L. Nitrite plus nitrate as nitrogen averaged 0.04 mg/L, with a range from 0 to 0.29 mg/L. Average phosphate was 0.03 mg/L and average selenium (water filtered) was 0.56 mg/L (USGS 2007). Observed suspended sediment concentrations at the Antelope Creek gage ranged from 5 to greater than 1,000 mg/l for the two-year period of record. The sediment content varies directly with water discharge. Therefore, the bulk of the sediment load is transported during spring snowmelt runoff and spring and summer thunderstorms.

Within the Moore Ranch Project Area, surface water samples were collected from 9 sampling locations at upstream and downstream locations from proposed mining areas during late fall of 2006, early spring of 2007, and late spring of 2007. All locations are existing stock ponds or areas in drainages where ponding occurs. Locations of these sample sites are shown on Figure 2.7.1-1. No surface water was available for sites MRSW-10 and MRSW-11 for sampling during these periods. Water quality data collected from these surface water sites is summarized in Tables 2.7.3-1 through 2.7.3-9, overall average concentrations are shown in Table 2.7.3-11, and seasonal averages are shown in Table 2.7.3-10. Detection limit values were used for non-detectable results for calculation purposes.

In general, surface water contained in the ponds at the sampling locations will exhibit typical saline characteristics of coal-bed methane surface discharge (higher values for conductivity, TDS, and bicarbonate) during summer and fall months. Sampling data shows that surface water quality changes during spring months when dilution occurs from snow melt or heavy precipitation events. Significantly higher values for bicarbonate, carbonate, chloride, conductivity, fluoride, TDS, gross alpha, gross beta, nitrogen, arsenic, potassium, magnesium, and sodium occurred during the fall sampling when the surface water contained was largely comprised of CBM discharge. Values for these parameters were typically the lowest during the samples taken in late March, which were taken soon after a large snowmelt event. Samples taken in June, while showing slightly higher concentrations than the March sampling, were also significantly lower than the fall sample due to the influence of spring runoff water

contained in the ponds. Another round of surface water samples will be collected in the third quarter of 2007 (late summer) at locations with available water. It is anticipated that water quality from these samples will resemble results from the samples taken in the fall of 2006.

Average water quality during the fall sampling exceeded Wyoming Class I (domestic use) for TDS, pH, and iron, and just slightly exceeded Class II (agriculture use) and Class III (livestock use) for pH. Averages for the other sampling periods also exceeded all class of use standards for pH. Overall averages for all sample rounds combined also exceed all class of use standards for pH and the Class I standard for TDS. The data tables also show lead average values for the fall and overall averages above the Class I standard, however these values are inaccurately high due to the use of a detection limit of 0.05 mg/L for the fall of 2006 samples in the calculations. This detection limit in itself exceeds the Class I standard of 0.015 mg/L. Sample results for the next two sample rounds show much lower results below the Class I standard. Also, one value for lead-210 activity at MRSW-1 for the fall of 2006 shows an extremely high anomalous value of 170 picocuries per liter (pCi/L), and as a result, was believed to be lab error and excluded from the average calculations.

2.7.3.2 Groundwater Quality

Information regarding site water quality is primarily derived from studies conducted by Conoco (1982) and from ongoing exploration and delineation of the Moore Ranch Project by EMC. Conoco began a baseline groundwater monitoring program in 1978 as part of its Mine Permit Application for the Sand Rock Project. EMC has initiated a baseline groundwater monitoring program to collect data required for the Permit to Mine and NRC License Applications for the Moore Ranch Uranium Project.

Regional Water Quality

Water quality within the Powder River Basin ranges from very poor to excellent. Groundwater in the near surface, more permeable aquifers is generally of better quality than groundwater in deeper and less permeable aquifers. However, significant regional aquifers are present at depth that can provide relatively good quality water. In particular, the Mesaverde Formation, Frontier Formation, Madison Limestone and Tensleep Sandstone can produce large quantities of acceptable quality water. Overall, water quality tends to degrade moving into the deeper portions of the Powder River Basin.

Sources of water quality data include the historic USGS WATSTOR data system (now replaced by the National Water Information System), the Wyoming Water Resources Research Institute (WWRI) data system (WRDS) and compilations by various authors

including Hodson (1971 and 1974), Larson and Daddow (1984), Crawford (1941), Crawford and Davis (1962) and Wells (1979).

Water quality from the Madison Limestone illustrates the downgradient, basinward increase in TDS levels. Springs from Madison outcrops along the west side of the basin generally yield calcium bicarbonate type water containing less than 500 mg/l TDS. Further into the basin, groundwater within the Madison aquifer becomes progressively more saline with TDS values rapidly exceeding 3,000 mg/l. Groundwater transitions to a sodium sulfate, sodium-chloride water type with distance from recharge areas. TDS concentrations rapidly increase in Western Converse County, possibly related to the structural complexity along the north flank of the Laramie Mountains (Feathers 1981).

Similarly, in the western half of the Powder River Basin, water quality from outcrop areas of the Tensleep Formation is generally below 500 mg/l TDS. Low TDS waters tend to be predominately magnesium to calcium-bicarbonate type. Higher TDS samples generally are associated with higher sodium sulfate or sodium chloride levels. (Feathers 1981)

A study conducted by Lowry, et. al. (1986) that included the Powder River Basin as well as upstream parts of the Belle Fourche and Cheyenne River basins, reported that 84 percent of wells and springs reviewed exceeded the USEPA secondary drinking water standard for TDS (500 mg/l) and approximately 55 percent of the samples exceeded 1,000 mg/l. The sample set included 693 wells and springs. The average TDS concentration (in mg/l) reported in the study by formation was as follows.

Table 2.7.3-12 Total Dissolved Concentration by Formation, Powder River Basin (after Lowry et al 1986)

Formation	Average	Min	Max	No of Samples
Alluvium	2,128	106	6,610	38
Wasatch Formation	1,298	227	8,200	191
Fort Union Formation	1,464	209	5,620	257
Fox Hills/Hells Creek Formations	1,100	340	5,450	73
Lance Formation	1,218	251	2,850	31
Tensleep Sandstone*	874	230	6,820	15
Madison Group	1,503	65	3,240	25

* Most of the Tensleep Sandstone samples were collected from springs and near formation outcrop areas

The study noted that the dominant factor affecting TDS concentration within an aquifer is most likely the length of the flow path from recharge to discharge. Wells close to recharge areas generally have the lowest TDS levels and wells farthest from the recharge

areas tend to have the highest TDS levels. Only 8 percent of the samples exceeded 3,000 mg/l.

TDS levels within the Fox Hills Sandstone are generally higher in the western side of the basin than the eastern side, ranging between 1,000 and 2,000 mg/l. No water type is prevalent. TDS values from the Lance Formation range from about 200 to more than 2,000 mg/l but are typically between 500 and 1,500 mg/l (Hodson 1973).

Water quality for the Fort Union aquifer is described by Hodson (1973) as having TDS values ranging from 200 to more than 3,000 mg/l, but typically is between 500 and 1,500 mg/l. Water type for the Fort Union is predominately sodium bicarbonate to sodium sulfate.

Within the Wasatch, TDS ranges from less than 200 to more than 8,000 mg/l but typically ranges between 500 and 1500 mg/l. Sodium sulfate and sodium bicarbonate are the dominant water types for the Wasatch aquifer system.

The study by Lowry (1986) indicated that manganese levels exceeded the USEPA secondary drinking water standard (SDWS) of 50 µg/l in 43 percent of the 257 samples reviewed. Iron concentrations exceeded the USEPA SDWS (0.3 mg/l) in over 15 percent of the 366 samples reviewed. Selenium levels exceeded USEPA Maximum Contaminant Level (MCL) of 0.05 mg/l in a small percentage of the wells (2.5 percent). Lead levels exceeded the MCL of 0.015 mg/l in 3.6 percent of the samples. There was no breakdown of the sample groups by formation reported in the study.

Radionuclide data for the Powder River Basin are sparse outside of the uranium mining areas. Feathers and others (1981) reported uranium ranging from 0.5 to over 10,000 µg/l for 96 samples collected from mine monitor wells completed in the Wasatch Formation. Radium-226 samples from the same sample group ranged from 0.2 to 173 pCi/l. Samples from five non-mining locations indicated uranium levels at or below 0.6 µg/l and radium-226 levels at or below 0.8 pCi/l.

Uranium levels from 31 samples from mine monitor wells completed in the Fort Union Formation ranged from 5 to 3,550 µg/l (Feathers 1981). The radium-226 concentration in those same wells ranged from 3.7 to 954 pCi/l. Samples from non-mine wells completed in the Fort Union Formation were generally low in uranium and radium-226 concentration. Samples from Lance and Fox Hills wells were much lower than those completed in the Wasatch and Fort Union mine wells but were similar to the non-mine wells for those formations.

Near Moore Ranch, hydrostratigraphic units deeper than the Fox Hills Sandstone are generally too deep to be economically developed for water supply or have elevated TDS

concentrations that render them unusable for consumption. At Moore Ranch, the Lower Cretaceous and Paleozoic aquifers are separated from the Wasatch aquifer by over 5,000 feet of sediments.

Site Baseline Water Quality

Information regarding site water quality is primarily derived from studies conducted by Conoco (1982) and from ongoing exploration and delineation of the Moore Ranch Project by EMC. Conoco began a baseline groundwater monitoring program in 1978 as part of its Mine Permit Application for the Sand Rock Project. EMC has initiated a baseline groundwater monitoring program to collect data required for the Permit to Mine and NRC License Applications for the Moore Ranch Uranium Project

Groundwater Monitoring Network and Parameters

Conoco installed monitor wells within the proposed License Area that were completed in the production zone aquifer (70 Sand), the overlying aquifer (72 Sand), the underlying aquifer (68 Sand), the 40-50 Sand, and the Roland Coal. The locations of the Conoco monitor wells that were sampled for water quality are shown on Figure 2.7.3.-1. Table 2.7.3-13 provides construction details for the Conoco monitor wells used in the initial baseline analysis for the area. The parameters included in the Conoco Monitoring Program are listed in Table 2.7.3-14.

Based on the data provided in the Conoco Mine Permit Application (1982), many of the wells were only sampled once. However, five of the wells, 1, 8-3, 893, 1808 and 1814, were sampled at least four times from November 1978 through April 1980. Two of the wells that were sampled multiple times by Conoco (1808 and 8-3) and one well (885) that was only sampled once, were also included in recent sampling rounds by EMC. The initial monitoring performed by Conoco, and the continuation of monitoring of some of the original wells, provides an extensive baseline record of water quality that supplements the current baseline sampling program.

Conoco also collected groundwater samples from eleven private wells within and near the proposed License Area. These wells were primarily stock wells. The locations of most of those wells are also shown on Figure 2.7.3-1. Several of the private wells are located over two miles outside the License area and are not shown on the figure. The private wells were sampled for the same parameters as the Conoco monitor wells (Table 2.7.3-14). Construction details on the private wells were generally unavailable. Some of these private wells have also been included in the current EMC baseline sampling program.

EMC has installed a monitor well network to evaluate pre-mining baseline conditions within the License area. Four well groups were constructed, each including a completion

in the production zone aquifer, the overlying aquifer, and the underlying aquifer. In addition to the well groups, four new wells completed in the 70 Sand are included in the baseline water quality monitoring network. Three of the original Conoco wells, 8-3, 1808, and 885, and 4 stock wells were also included in the monitoring program. Monitor wells 8-3 and 1808 are completed across both the 70 and 68 Sands. Monitor well 885 is only completed across the 70 Sand. Table 2.7.3-15 provides a summary of well construction information. The locations of wells included in the current monitoring network are shown on Figure 2.7.3-2. The parameters included in the EMC baseline monitoring program are listed in Table 2.7.3-16.

Table 2.7.3-14 Conoco Baseline Water Quality Monitoring Parameters

Major Ions	**Trace Constituents**	**Radionuclides**
Calcium	Aluminum	Radium-226
Magnesium	Ammonia	Uranium
Potassium	Arsenic	Polonium-210
Sodium	Barium	Lead-210
Bicarbonate	Beryllium	Thorium-230
Chloride	Boron	
Carbonate	Cadmium	
Sulfate	Chromium	
Nitrate (Total)	Copper	
	Fluoride	
	Iron	
General Water Chemistry	Lead	
Total Dissolved Solids	Manganese	
pH (field and laboratory measured)	Mercury	
Conductivity(field and lab measured)	Molybdenum	
Temperature (field measured)	Nickel	
	Selenium	
	Vanadium	
	Zinc	

This baseline analysis is intended to evaluate the overall quality of groundwater that is moving beneath the License Area under normal pre-mining conditions and does not provide the final basis for establishing restoration criteria for the individual mine units. The mine unit baseline water quality assessment and restoration goals will be provided to the WDEQ with the Mine Unit Plan and reviewed and approved by the EMC Safety and Environmental Review Panel (SERP).

Two rounds of water sampling have been completed in the newly installed monitor well network as of August 2007. Additional sampling events are planned in order to fully assess seasonal and other potential impacts to groundwater quality. However, as described in following sections, with the exception of a few wells, water quality is generally consistent between the two sampling rounds. Also, data collected from the previous baseline monitoring program conducted by Conoco provide additional information to assess temporal variability in water quality. Current data collected from wells included in the previous baseline monitoring by Conoco show relatively consistent results with the previous data showing consistent water quality for the past 25 years. As a result, EMC does not anticipate any significant changes in water quality for the next two sample rounds and believes that sampling data collected to date is representative of site groundwater quality.

Four stock wells located within the License Area were also sampled by EMC to establish pre-mining groundwater quality. Three of the wells (T-1, P'-9, and P'-11) were previously sampled under the Conoco monitoring program (1978-1980). The locations of the four wells are shown on Figure 2.7.3-2. EMC recently replaced the pumps in those wells and was able to gather the following information.

- Stock Well #1 (formerly referred to as T-1). Pump is set 180' below surface in steel casing. Water right associated with this well is Permit No. 12299. Well may be completed within the 70 Sand based on depth of pump.

- Stock Well #2 (formerly referred to as P'11). Pump is set 260' below surface in steel casing. Well is most likely completed in the 68 Sand.

- Stock Well #3 (formerly referred to as P'9). Pump is set 120' below surface in steel casing. Well is most likely completed in the 70 Sand.

- Stock Well #4 (formerly referred to as P'26). Pump is set 141' below surface in steel casing. Total depth of the well is 158 ft. Water right associated with well is Permit No. 14682. Well is likely completed above the 70 Sand, probably within the 72 sand.

Table 2.7.3-16 EMC Baseline Water Quality Monitoring Parameters

Major Ions	**Trace Constituents**	**Radionuclides**
Calcium	Aluminum (dissolved)	Gross Alpha
Magnesium	Ammonia (as N)	Gross Beta
Potassium (dissolved)	Arsenic (dissolved)	Lead-210 (dissolved and suspended)
Sodium	Barium (dissolved)	Polonium-210 (dissolved and suspended)
Bicarbonate	Beryllium (dissolved)	Radium-226 (dissolved and suspended)
Chloride (dissolved)	Boron	Thorium-230 (dissolved land suspended)
Carbonate	Cadmium (dissolved)	Uranium (dissolved and suspended)
Sulfate	Chromium (dissolved)	
Nitrate + Nitrite (as N)	Copper (dissolved)	
Silica	Fluoride	
	Iron (dissolved and total)	
	Lead (dissolved)	
General Water Chemistry	Manganese (dissolved and total)	
Total Dissolved Solids (@180 F)	Mercury (dissolved)	
pH (field and laboratory measured)	Molybdenum (dissolved)	
Conductivity(field and lab measured)	Nickel (dissolved)	
Temperature (field measured)	Selenium (dissolved)	
	Vanadium	
	Zinc (dissolved)	

Groundwater Quality Sampling Results

Results of the Conoco and EMC baseline monitoring programs are summarized in Tables 2.7.3-17, 2.7.3-18, and 2.7.3-19. Overall water quality determined from the monitoring programs indicates a predominately calcium sulfate to calcium bicarbonate water, although significant differences are apparent between the Production Zone and overlying and underlying aquifers. Figure 2.7.3-3 is a Piper diagram of the average ion concentration for each of the monitor wells included in the EMC baseline sampling

program (completed in the 68 through 72 Sands). Groundwater within the production zone aquifer is generally a calcium sulfate type. The overlying monitor wells exhibit a generally calcium sulfate type water with the exception of OMW3, which is a calcium bicarbonate type. The underlying monitor wells are more variable, ranging from calcium-to-sodium-sulfate and calcium-to-sodium-bicarbonate. Chloride and carbonate are generally very low in all of the wells.

Figure 2.7.3-4 is a Piper diagram for the average ion concentration for each of the aquifers (including a category for those wells screened in both the 68 and 70 Sands) for the EMC baseline sampling program. Historic data from the wells completed in the 40-50 Sand and the Roland Coal (wells 1822 and 1821 respectively) are also included on the diagram for reference. The water types for these two deeper aquifers show progressively decreasing sulfate and increasing bicarbonate and sodium with depth. The Roland coal sample is clearly a sodium bicarbonate water type. The typical 68 Sand (underlying aquifer) water type appears more like the 40-50 Sand and Roland Coal type water than the 70 (production zone) and 72 Sands (overlying aquifer). A Stiff diagram of the water quality for the different aquifers shows the transition with depth from a calcium sulfate water to a sodium bicarbonate water (Figure 2.7.3-5)

Three wells that were installed and monitored by Conoco (1982) were included in the current monitoring program. One of the wells, 885, is completed in the production zone aquifer and the other two wells are completed across the production zone and underlying aquifers. Table 2.7.3-20a compares the analytical results of these monitor wells from the Conoco and EMC baseline monitoring programs. The table shows that two of the monitor wells, 885 and 1808 have shown reasonably consistent water quality since the initial sampling began in 1978. Well 8-3 appears to have anomalous values as described below.

The two wells completed across multiple aquifers, 1808 and 8-3, would be expected to have water quality that falls within the range observed in those two sands. That is the case for well 1808 (Figure 2.7.3-3). However, well 8-3 plots outside of the range observed within either the 68 or 70 sand. The calcium, magnesium and sulfate levels in that well are much higher than the values observed in other monitor wells included in the EMC program. Correspondingly, TDS for 8-3 was over twice as high as for any other production zone or underlying monitor well. In addition, the calcium, magnesium and sulfate levels in well 8-3 are much higher in the recent sampling events than when the well was first sampled by Conoco in 1979 (Table 2.7.3-20a). Other parameters show relatively good consistency with other wells and historic data. A potential cause of these anomalous values for calcium, magnesium, and sulfate could be related to impacts from small mammals falling into the well. This well was covered by a box that contained an old strip chart recorder and float for continuous water level measurement, which protected the well from the weather. However, evidence that small mammals had fallen down the well was observed when the old recording equipment was removed for

sampling. Decay of the organic material in the well is a possible cause of the anomalous values detected during monitoring. While several casing volumes were removed during sampling, this well will be flushed by air lifting or increased purging prior to the next sampling round. This anomaly will be evaluated further with additional sampling events. Water quality in the other two wells, 885 and 1808, did not change significantly between the historic Conoco and the EMC sampling events.

Table 2.7.3-20b compares the analytical results from the private wells that have been sampled under both the Conoco and EMC baseline monitoring programs. The list of constituents common to both data sets is not as complete as for the monitor wells listed in Table 2.7.3-20a because not all of the parameters were sampled by Conoco. However, the parameters that were monitored show good consistency over time, an indication of the relatively stable long term aquifer conditions in the area. Future baseline monitoring is anticipated to show a continuation of this long term stability.

Table 2.7.3-21 is a summary of the analytical results for the current EMC baseline monitoring for wells completed in the production zone and the overlying and underlying aquifers. Wells that are screened across multiple aquifers or that are of unknown completion intervals are not included in the table. The results are compared to WDEQ Class I Standards and USEPA MCLs.

As shown on the table, over half of the samples exceeded the WDEQ Class I standard for TDS (500 mg/l), with the greatest proportion of exceedences occurring in samples from the production zone aquifer. Figure 2.7.3-6 shows the distribution of TDS in the production zone and the overlying and underlying aquifers. The range of TDS within wells completed in either the production zone or the underlying or overlying aquifers was 266 to 1350 mg/l with an average of 629 mg/l. Well 8-3, which is not included in the table because it is completed across both the production zone and the underlying aquifers, had an average TDS value of 2,380 mg/l over the two recent sampling events.

Similarly, almost half of the production zone samples exceeded the WDEQ Class I standard for sulfate of 250 mg/l (Figure 2.7.3-7). Sulfate ranged from 79 to 743 mg/l with an average of 301.6 mg/l. The highest sulfate value was found in well 8-3 (1,430 mg/l) which, again, was not included in the table because the well is completed across both the production zone and underlying aquifer and due to potential well biological contamination as discussed above.

Ammonia, iron, manganese, and selenium were the only trace minerals to exceed standards. The ammonia WDEQ Class I standard of 0.05 mg/l was exceeded at two overlying monitor wells (OMW1 and OMW2). Iron exceeded the WDEQ Class I standard (0.3 mg/l) in one underlying well (UMW4), one overlying monitor well (OMW4), and two production zone monitor wells (MW11 and PW-1) and at well 8-3.

Iron ranged from below detection to 3.34 mg/l. Manganese exceeded the WDEQ Class I standard (0.05 mg/l) in one production zone monitor well (885) and one overlying monitor well (OMW4). The selenium standard (0.5 mg/l for WDEQ Class I and EPA MCL) was exceeded in two wells in the underlying aquifer (UMW2 and UMW4) and two wells in the production zone aquifer (MW2 and MW7).

The majority of the samples collected from the production zone and underlying aquifers exceeded the USEPA MCLs for uranium (0.03 mg/l) and radium 226+228 (5 pCi/l). None of the samples from the overlying monitor wells exceeded the standard for uranium and only one exceeded the radium standard (OMW3). Figure 2.7.3-8 shows the distribution of uranium within the three aquifers. Uranium ranged from below detection (<0.0003) to 0.864 mg/l. Radium 226 distribution is shown in Figure 2.7.3-9. The average uranium concentration for the production zone aquifer was 0.16 mg/l, over five times the USEPA MCL. For the 68 Sand aquifer, uranium concentration averaged 0.07 mg/l. Radium 226 ranged from below detection (<0.2) to 306 pCi/l with an average of 59.2 pCi/l. Radium-228 values were much lower, ranging from below detection (<1.0) to 9.5 pCi/l. The combined radium 226+228 concentration in the production zone aquifer averaged 96.2 pCi/l, over an order of magnitude greater than the Wyoming Class I Standard or the USEPA MCL.

Underlying wells UMW-1 and UMW-3 had limited water above the J-collar (top of screen liner) available for sampling and the J-collar prevents lowering a pump into the screen. As a result, adequate purging these wells has proven to be difficult and will pose a difficulty in future sampling, which renders the water quality data for these wells questionable and data from wells UMW-4 and UMW-2 are more likely to be representative of water quality in the underlying 68 Sand. EMC will continue sampling efforts in these wells and evaluate any changes in water quality, and water quality of the underlying aquifer will be evaluated extensively during wellfield specific pre-mining baseline hydrologic testing activities.

In summary, general water quality in the shallow Wasatch aquifers within the Moore Ranch License area commonly exceeds WDEQ Class I standards for TDS and SO_4. Radionuclides radium-226 and uranium are elevated above EPA MCLs in the majority of the samples collected from the production zone aquifer and the underlying aquifer. The average radium 226-228 concentration in the production zone is an order of magnitude greater than the USEPA MCL. Elevated concentration of these constituents is consistent with the presence of uranium ore-bodies. Current data collected from wells included in the previous baseline monitoring by Conoco show relatively consistent results with the previous data, showing consistent water quality for the past 25 years (with the exception of the three anomalous values and potential causes for well 8-3 as previously described). As a result, EMC does not anticipate any significant changes in water quality for the next

two sample rounds and believes that sampling data collected to date and presented in this application are representative of site groundwater quality, unless otherwise noted.

2.7.4 References

Section 2.7.1 References

Conoco Inc. 1982. *Moore Ranch Mine and Sand Creek Mine Project, Campbell County, Wyoming. Wyoming Department of Environmental Quality Mine Permit Application.* Prepared by Conoco Inc. Minerals Department

Conoco, Inc. 1980. *Environmental Report for the Sand Rock Mill Project, Campbell County, Wyoming, Docket No. 40-8743.* July, 1980.

Craig and Rankl, 1977, *Analysis of Runoff from Small Drainages in Wyoming, US Geological Survey*, Open-File Report 77-727

Craig and Rankl, 1978, *Analysis of Runoff from Small Drainages in Wyoming,* US Geological Survey, Water Supply Paper 2056

Lowham, 1972, *Techniques for Estimating Flow Characteristics of Wyoming Streams*, U.S. Geological Survey, Water Resources Investigation 76-112

Lowham, 1988, *Streamflows in Wyoming*, USGS Water Resources Investigations Report 88-4045

Western Water Consultants, 1995, *Stability Evaluation For Designed Ephemeral Channels in Wyoming, University of Wyoming Abandoned Coal Mine Lands Research Program- Final Technical Report*

Section 2.7.2 References

Conoco Inc. 1982. *Moore Ranch Mine and Sand Creek Mine Project, Campbell County, Wyoming. Wyoming Department of Environmental Quality Mine Permit Application.* Prepared by Conoco Inc. Minerals Department.

Dames & Moore 1978. *Ground Water Hydrology, Moore Ranch Project, Campbell County, Wyoming.*

Gill, J.R., and Cobban, W.A. 1961. *Stratigraphy of Lower and Middle Parts of the Pierre Shale, Northern Great Plains, in* Short Papers in the Geologic and Hydrologic Sciences. U.S. Geological Survey Professional Paper 424-D, p. D185-D191.

Hodson, W.G, R.H. Pearl and S.A. Druse. 1973. *Water Resources of the Powder River Basin and Adjacent Areas, Northeastern Wyoming.* U.S. Geological Survey Hydrologic Investigations Atlas HA-456. 4 Sheets.

Honea, R. 1974. *Geology and Geochemistry of Irigaray-Hoe Uranium Mineralization, Johnson County, Wyoming.* Prepared for the Nuclear Fuel Division, Westinghouse Electric Corporation.

Horn, G.H. 1955. *Geologic and Structure Map of the Sussex and Meadow Creek Oilfields and Vicinity, Johnson and Natrona Counties, Wyoming.* U.S. Geological Survey Oil and Gas Investigation Map OM-164

Hose, R.K. 1955. *Geology of the Crazy Woman Creek Area, Johnson County, Wyoming.* U.S. Geological Survey Bulletin 1027-B, p. 33-118

Lobmeyer, D.H. 1985. *Freshwater Heads and Ground-water Temperatures in Aquifers of the Northern Great Plains of Montana, North Dakota, South Dakota and Wyoming*: U.S. Geological Survey Professional Paper 1402-D, 11p.
Lowry & Wilson, 1986

Morris, A. and J. Bahr, 1975. *Geology and Ore Reserves of the Irigaray Area, Johnson County, Wyoming.* Internal report prepared for Wyoming Mineral Corporation.

Petrotek Engineering Corporation, 2007. *Moore Ranch Hydrologic Testing Report, Campbell County, WY.* Prepared for Energy Metals Corporation, Casper Wyoming September 2007.

Rankl, J. G. and M.E. Lowry. 1990. *Ground-water Flow Systems in the Powder River Structural Basin, Wyoming and Montana.* US Geological Survey Water-Resources Investigations Report 85-4229

Rose, S.1971. *Litholic Favorability of the Irigaray-Hoe Area.* An interim report prepared for Nuclear Fuel Division, Westinghouse Electric Corporation.

Taylor, O.J. 1978. *Summary Appraisals of the Nation's Groundwater Resources-Missouri River Basin.* Geological Survey Professional Paper 813-Q. 41 pp

US Geological Survey 1996. *Ground Water Atlas of the United States, Segment 8 Montana, North Dakota, South Dakota and Wyoming.* Hydrologic Atlas 730-I.

US Nuclear Regulatory Commission. NUREG 1569 *Standard Review Plan for In Situ Leach Uranium Extraction License Applications*

Weimer, R. 1961. *Spatial Dimensions of Upper Cretaceous Sandstones, Rocky Mountain Area. In* Geometry of Sandstone Bodies. American Association of Petroleum Geologists, 1961, p 82-97

Section 2.7.3 References

Conoco Inc. 1982. *Moore Ranch Mine and Sand Creek Mine Project, Campbell County, Wyoming. Wyoming Department of Environmental Quality Mine Permit Application.* Prepared by Conoco Inc. Minerals Department.

Crawford, J.C. 1940. *Oil Field Waters of Wyoming and Their Relation to Geological Formations*. Bulletin American Association of Petroleum Geologists, Vol 24, p. 1214-1329.

Crawford, J.C., and C.E. Davis. 1962. *Some Cretaceous Water of Wyoming. In* Guidebook, Wyoming Geological Association 17th Annual Field Conference, p. 257-267.

Feathers, K.R., R.Libra, and T.R. Stephenson. *Occurrence and Characteristics of Ground Water in the Powder River Basin, Wyoming*, Volume I-A. Prepared by Water Resources Research Institute University of Wyoming for the U.S Environmental Protection Agency Contract Number G-008269-79.

Hodson, W.G. 1971 *Chemical Analyses of Ground Water in the Powder River Basin and Adjacent Areas, Northeastern Wyoming.* Wyoming Department of Economic Planning and Development, Cheyenne, 18p.

Hodson, W.G, R.H. Pearl and S.A. Druse. 1973. *Water Resources of the Powder River Basin and Adjacent Areas, Northeastern Wyoming.* U.S. Geological Survey Hydrologic Investigations Atlas HA-456. 4 Sheets.

Hodson, W.G. 1974. *Records of Water Wells, Springs, Oil and Gas-Test Holes and Chemical Analyses of Water for the Madison Limestone and Equivalent Rocks in the Powder River Basin and Adjacent Areas, Northeastern Wyoming.* U.S. Geological Survey Open File Report 24 p.

Larson, L.R., and R.L. Daddow. 1984. *Ground-Water-Quality Data From the Powder River Structural Basin and Adjacent Areas, Northeastern Wyoming.* U.S. Geological Survey Open File Report 83-939

Lowry, M.E, J.F Wilson Jr. and Others. 1986. *Hydrology of Area 50, Northern Great Plains and Rocky Mountain Coal Provinces, Wyoming and Montana.* U.S. Geological Survey Water Resources Investigations Open File Report 830-545, Cheyenne, Wyoming

Wells, K.K., Busby, J.F., and Glover, K.C. 1979. *Chemical Analyses of Water From the Minnelusa Formation and equivalents in the Powder River Basin and Adjacent Areas, Northeastern Wyoming.* U.S. Geological Survey Basic Data Report, Wyoming Water Planning Program Report No 18, Wyoming State Engineer, Cheyenne.

FIGURES (Section 2.7.1)

TABLES (Section 2.7.1)

FIGURES (Section 2.7.2)

TABLES (Section 2.7.2)

FIGURES (Section 2.7.3)

TABLES (Section 2.7.3)

2.7.3-19 Analytical Results EMC Monitoring Program
2.7.3-20a Comparison of Historic and Current Baseline Monitoring Analytical Results from Monitor Wells
2.7.3-20b Comparison of Historic and Current Baseline Monitoring Analytical Results from Private Wells
2.7.3-21 Comparison of Moore Ranch Monitoring Results to Water Quality Standards

Table 2.7.2-1 Monitor Well Data, Moore Ranch Project

Well	Northing	Easting	Township/ Range	Section	TOC Elevation (ft; amsl)	Hole Depth (ft; bgs)	Casing Depth (ft; bgs)	Top Screen (ft; bgs)	Bottom Screen (ft; bgs)	Screen Length (ft; bgs)	Aquifer	Casing I.D. (inches)
PW-1	320,209	1,057,961	T42N R75W	35	5,373.88	280	174	176	246	70	PZ 70 Sand	4.5
MW-1	320,100	1,057,961	T42N R75W	35	5,379.28	280	180	182	250	68	PZ 70 Sand	4.5
MW-2	322,635	1,057,708	T42N R75W	35	5,312.40	200	128	130	195	65	PZ 70 Sand	4.5
MW-3	317,948	1,060,543	T42N R75W	34	5,428.19	320	267	269	317	48	PZ 70 Sand	4.5
MW-4	318,697	1,056,272	T42N R75W	34	5,312.59	280	190	126	164	38	PZ 70 Sand	4.5
MW-5	321,452	1,056,678	T42N R75W	35	5,328.85	280	190	128	198	70	PZ 70 Sand	4.5
MW-6	323,791	1,058,277	T42N R75W	35	5,352.34	280	190	177	257	80	PZ 70 Sand	4.5
MW-7	322,535	1,056,299	T42N R75W	35	5,311.73	280	190	90	177	87	PZ 70 Sand	4.5
MW-8	317,921	1,057,961	T42N R75W	34	5,336.06	280	190	152	205	53	PZ 70 Sand	4.5
MW-9	317,099	1,059,198	T42N R75W	34	5,366.78	280	190	192	252	60	PZ 70 Sand	4.5
MW-10	320,115	1,059,378	T42N R75W	35	5,367.28	280	183	185	250	65	PZ 70 Sand	4.5
MW-11	317,693	1,061,868	T42N R75W	27	5,414.43	340	279	281	331	50	PZ 70 Sand	4.5
OMW-1	320,090	1,057,961	T42N R75W	35	5,379.79	180	146	148	168	20	Overlying 72 Sand	4.5
OMW-2	322,625	1,057,708	T42N R75W	35	5,312.32	100	59	60	78	18	Overlying 72 Sand	4.5
OMW-3	317,938	1,060,543	T42N R75W	34	5,427.72	250	203	205	245	40	Overlying 72 Sand	4.5
OMW-4	318,687	1,056,272	T42N R75W	34	5,312.41	120	74	76	91	15	Overlying 72 Sand	4.5
UMW-1	320,110	1,057,961	T42N R75W	35	5,379.39	340	280	282	312	30	Underlying 68 Sand	4.5
UMW-2	322,645	1,057,708	T42N R75W	35	5,313.07	280	228	230	250	20	Underlying 68 Sand	4.5
UMW-3	317,958	1,060,543	T42N R75W	34	5,426.89	380	351	353	378	25	Underlying 68 Sand	4.5
UMW-4	318,707	1,056,272	T42N R75W	34	5,313.37	300	220	222	252	30	Underlying 68 Sand	4.5
Historic Conoco Wells												
1822	321,574	1,060,356	T42N R75W	35	5,355	740	560	560	600	40	50/40 Sand	NI
887	318,000	1,058,278	T42N R75W	34	5,347	320	290	290	320	30	Underlying 68 Sand	3
1823	320,630	1,056,440	T42N R75W	35	5,345	240	210	210	240	30	Underlying 68 Sand	NI
1807	322,729	1,057,976	T42N R75W	35	5,328	290	250	250	290	40	Underlying 68 Sand	3
1	322,598	1,058,010	T42N R75W	35	5,331	240	200	200	240	40	PZ 70 Sand	5
885	317,898	1,058,399	T42N R75W	34	5,350	240	180	180	240	60	PZ 70 Sand	5
886	317,819	1,058,258	T42N R75W	34	5,349	240	180	180	240	60	PZ 70 Sand	3
888	317,910	1,058,398	T42N R75W	34	5,352	250	180	180	240	60	PZ 70 Sand	3

Table 2.7.2-1 Monitor Well Data, Moore Ranch Project

Well	Northing	Easting	Township/ Range	Section	TOC Elevation (ft; amsl)	Hole Depth (ft; bgs)	Casing Depth (ft; bgs)	Top Screen (ft; bgs)	Bottom Screen (ft; bgs)	Screen Length (ft; bgs)	Aquifer	Casing I.D. (inches)
889	315,219	1,057,936	T42N R75W	34	5,334	260	200	200	260	60	PZ 70 Sand	3
893	317,890	1,058,318	T42N R75W	34	5,348	240	153	153	240	87	PZ 70 Sand	5
1805	322,638	1,058,047	T42N R75W	35	5,331	240	120	120	240	120	PZ 70 Sand	3
1806	322,578	1,057,946	T42N R75W	35	5,324	220	120	120	200	80	PZ 70 Sand	3
1809	325,349	1,058,177	T42N R75W	35	5,356	230	135	135	225	90	PZ 70 Sand	3
1810	320,128	1,057,966	T42N R75W	35	5,378	265	200	200	260	60	PZ 70 Sand	3
1814	320,620	1,056,541	T42N R75W	35	5,345	207	143	143	207	64	PZ 70 Sand	5
1815	320,550	1,056,471	T42N R75W	35	5,348	208	142	142	208	66	PZ 70 Sand	3
1816	320,701	1,056,501	T42N R75W	35	5,343	207	137	138	207	69	PZ 70 Sand	3
1817	320,610	1,056,752	T42N R75W	35	5,350	233	143	143	233	90	PZ 70 Sand	3
22-2	322,809	1,054,603	T41N R75W	2	5,287	165	85	85	165	80	PZ 70 Sand	3
890	317,428	1,060,376	T42N R75W	34	5,410	330	240	240	330	90	70/68 Sand	3
1808	322,427	1,060,516	T42N R75W	35	5,377	275	195	195	275	80	70/68 Sand	5
8-3	318,060	1,054,523	T41N R75W	3	5,308	175	105	105	175	70	70/68 Sand	5
1821	321,534	1,060,275	T42N R75W	35	5,355	1,200	1,120	1,120	1,200	80	Roland Coal	6

Northing and Easting coordinates were converted from historic Conoco survey data to NAD 27 East State Plane Datum, accuracy is unknown.
NI - No information provided

Table 2.7.2-2 Water Level Data, Moore Ranch Project

				7/25/2007		7/17/2007		6/19/2007	
Well	**Easting (x)**	**Northing (y)**	**TOC Elev**	**DTW**	**Elev**	**DTW**	**Elev**	**DTW**	**Elev**
	(ft)	(ft)	(ft amsl)	(ft)	(ft amsl)	(ft)	(ft amsl)	(ft)	(ft amsl)
MW-1	320,100	1,057,961	5,379.28	193.09	5,186.19	191.40	5,187.88		
MW-10	320,115	1,059,378	5,367.28	185.14	5,182.14	185.20	5,182.08		
MW-11	317,693	1,061,868	5,414.43	242.55	5,171.88	242.60	5,171.83		
MW-2	322,635	1,057,708	5,312.40	124.24	5,188.16	124.30	5,188.10	126.00	5,186.40
MW-3	317,948	1,060,543	5,428.19	250.42	5,177.77	251.00	5,177.19		
MW-4	318,697	1,056,272	5,312.59	116.03	5,196.56	116.00	5,196.59		
MW-5	321,452	1,056,678	5,328.85	135.42	5,193.43	135.50	5,193.35		
MW-6	323,791	1,058,277	5,352.34	168.94	5,183.40	169.00	5,183.34		
MW-7	322,535	1,056,299	5,311.73	118.52	5,193.21	118.20	5,193.53		
MW-8	317,921	1,057,961	5,336.06	167.90	5,168.16	168.00	5,168.06		
MW-9	317,099	1,059,198	5,366.78	184.85	5,181.93	185.00	5,181.78		
PW-1	320,209	1,057,961	5,373.88	196.05	5,177.83	186.20	5,187.68		
OMW-1	320,090	1,057,961	5,379.79	141.24	5,238.55	141.20	5,238.59		
OMW-2	322,625	1,057,708	5,312.32	70.19	5,242.13	71.60	5,240.72		
OMW-3	317,938	1,060,543	5,427.72	188.45	5,239.27	188.50	5,239.22		
OMW-4	318,687	1,056,272	5,312.41	66.44	5,245.97	66.60	5,245.81		
1807	322,697	1,057,962	5,329.23						
UMW-1	320,110	1,057,961	5,379.39	191.22	5,188.17	193.20	5,186.19		
UMW-2	322,645	1,057,708	5,313.07	125.41	5,187.66	125.50	5,187.57		
UMW-3	317,958	1,060,543	5,426.89	267.65	5,159.24	267.00	5,159.89		
UMW-4	318,707	1,056,272	5,313.37	125.72	5,187.65	126.00	5,187.37	126.00	5,187.37
1805	322,670	1,058,062	5,332.50						
885									
1808								165.00	
8-3									

DTW - Depth to Water
Elev. - Water level elevation

Table 2.7.2-2 Water Level Data, Moore Ranch Project

	6/18/2007		6/13/2007		6/12/2007		5/10/2007		5/4/2007	
Well	**DTW**	**Elev**	**DTW**	**Elev**	**DTW**	**Elev**	**DTW**	**Elev**	**DTW**	**Elev**
	(ft)	(ft amsl)	(ft)	(ft amsl)	(ft)	(ft amsl)	(ft)	(ft amsl)	(ft)	(ft amsl)
MW-1					191.40	5,187.88				
MW-10					185.40	5,181.88				
MW-11					242.40	5,172.03			242.20	5,172.23
MW-2					129.40	5,183.00				
MW-3			255.00	5,173.19	250.60	5,177.59				
MW-4			115.70	5,196.89	116.00	5,196.59				
MW-5					135.60	5,193.25				
MW-6					169.00	5,183.34				
MW-7					118.60	5,193.13				
MW-8										
MW-9					185.00	5,181.78				
PW-1	186.00	5,187.88			186.50	5,187.38				
OMW-1	141.20	5,238.59			141.20	5,238.59				
OMW-2					69.60	5,242.72	75.60	5,236.72	67.40	5,244.92
OMW-3			188.00	5,239.72	188.60	5,239.12				
OMW-4			65.00	5,247.41	66.40	5,246.01				
1807										
UMW-1					193.10	5,186.29	191.40	5,187.99		
UMW-2	135.00	5,178.07			125.60	5,187.47				
UMW-3					259.60	5,167.29				
UMW-4					125.90	5,187.47	125.70	5,187.67		
1805										
885										
1808									153.00	
8-3			59.40							

DTW - Depth to Water
Elev. - Water level elevation

Table 2.7.2-2 Water Level Data, Moore Ranch Project

	5/1/2007		4/30/2007		4/26/2007		2/19/2007		2/14/2007	
Well	**DTW**	**Elev**	**DTW**	**Elev**	**DTW**	**Elev**	**DTW**	**Elev**	**DTW**	**Elev**
	(ft)	(ft amsl)	(ft)	(ft amsl)	(ft)	(ft amsl)	(ft)	(ft amsl)	(ft)	(ft amsl)
MW-1							192.87	5,186.41	191.33	5,187.95
MW-10							184.93	5,182.35	185.34	5,181.94
MW-11							241.32	5,173.11	242.21	5,172.22
MW-2							123.88	5,188.52	124.27	5,188.13
MW-3							250.18	5,178.01	250.50	5,177.69
MW-4			116.00	5,196.59			115.68	5,196.91	116.05	5,196.54
MW-5							135.23	5,193.62	135.55	5,193.30
MW-6					169.80	5,182.54	168.60	5,183.74	168.95	5,183.39
MW-7					118.90	5,192.83	118.25	5,193.48	118.61	5,193.12
MW-8							149.05	5,187.01	149.40	5,186.66
MW-9	185.00	5,181.78					184.58	5,182.20	184.94	5,181.84
PW-1									186.16	5,187.72
OMW-1					141.00	5,238.79			141.05	5,238.74
OMW-2									67.35	5,244.97
OMW-3					187.10	5,240.62	188.13	5,239.59	188.34	5,239.38
OMW-4					66.40	5,246.01			66.10	5,246.31
1807										
UMW-1									193.58	5,185.81
UMW-2									125.48	5,187.59
UMW-3							243.35	5,183.54	241.67	5,185.22
UMW-4									126.06	5,187.31
1805										
885	164.80									
1808										
8-3	59.40									

DTW - Depth to Water
Elev. - Water level elevation

Table 2.7.2-2 Water Level Data, Moore Ranch Project

	2/9/2007		2/8/2007		12/22/2006		12/15/2006	
Well	**DTW**	**Elev**	**DTW**	**Elev**	**DTW**	**Elev**	**DTW**	**Elev**
	(ft)	(ft amsl)	(ft)	(ft amsl)	(ft)	(ft amsl)	(ft)	(ft amsl)
MW-1	191.95	5,187.33	191.25	5,188.03	192.20	5,187.08		
MW-10	185.21	5,182.07			185.10	5,182.18		
MW-11	242.28	5,172.15			242.10	5,172.33		
MW-2	124.26	5,188.14			124.60	5,187.80		
MW-3	250.55	5,177.64	250.40	5,177.79	250.30	5,177.89		
MW-4	116.10	5,196.49						
MW-5	135.59	5,193.26			135.60	5,193.25		
MW-6	169.02	5,183.32			168.90	5,183.44		
MW-7	118.67	5,193.06						
MW-8	149.44	5,186.62			149.30	5,186.76		
MW-9	184.94	5,181.84			184.40	5,182.38		
PW-1	176.55?	5197.33?	185.86	5,188.02	182.90	5,190.98		
OMW-1	141.09	5,238.70	140.90	5,238.89	193.60	5,186.19		
OMW-2	67.44	5,244.88			66.30	5,246.02		
OMW-3	188.35	5,239.37	188.29	5,239.43	188.10	5,239.62		
OMW-4	66.11	5,246.30						
1807								
UMW-1	193.50	5,185.89	193.52	5,185.87				
UMW-2	125.55	5,187.52			125.60	5,187.47		
UMW-3	239.85	5,187.04	239.35	5,187.54	109.10	5,317.79		
UMW-4	122.18	5,191.19					123.70	5,189.67
1805								
885								
1808								
8-3								

Table 2.7.2-3 Vertical Hydraulic Gradient Calculations, Moore Ranch Project, Wyoming

Well ID	Completion Zone	Ground Surface Elevation	Top of Screen	Bottom of Screen	Midpoint Elevation	Water Level Elevation	Vertical Gradient*	Water Level Elevation	Vertical Gradient*	Water Level Elevation	Vertical Gradient*	Water Level Elevation	Vertical Gradient*	Water Level Elevation	Vertical Gradient*
		(ft amsl)	(ft bgs)	(ft bgs)	(ft amsl)	7/25/2007		7/17/2007		6/12/2007		2/14/2007		2/9/2007	
						(ft amsl)	(ft/ft)	(ft amsl)	(ft/ft)	(ft amsl)	(ft/ft)	(ft amsl)	(ft/ft)	(ft amsl)	(ft/ft)
OMW-1	72 Sand	5,379.70	148	168	5,222	5238.55	-	5238.59	-	5238.59	-	5238.74	-	5238.70	-
MW-1	70 Sand	5,379.00	182	250	5,163	5186.19	0.89	5187.88	0.86	5187.88	0.86	5187.95	0.87	5187.33	0.88
UMW-1	68 Sand	5,378.70	282	312	5,082	5188.17	-0.02	5186.19	0.02	5186.29	0.02	5185.81	0.03	5185.89	0.02
OMW-2	72 Sand	5,312.50	60	78	5,244	5242.13	-	5240.72	-	5242.72	-	5244.97	-	5244.88	-
MW-2	70 Sand	5,312.30	130	195	5,150	5188.16	0.58	5188.10	0.56	5183.00	0.64	5188.13	0.61	5188.14	0.61
UMW-2	68 Sand	5,312.40	230	250	5,072	5187.66	0.01	5187.57	0.01	5187.47	-0.06	5187.59	0.01	5187.52	0.01
OMW-3	72 Sand	5,427.00	205	245	5,202	5239.27	-	5239.22	-	5239.12	-	5239.38	-	5239.37	-
MW-3	70 Sand	5,426.90	269	317	5,134	5177.77	0.90	5177.19	0.91	5177.59	0.90	5177.69	0.91	5177.64	0.91
UMW-3	68 Sand	5,426.50	353	378	5,061	5159.24	0.25	5159.89	0.24	5167.29	0.14	5185.22	-0.10	5187.04	-0.13
OMW-4	72 Sand	5,312.60	76	91	5,229	5245.97	-	5245.81	-	5246.01	-	5246.31	-	5246.30	-
MW-4	70 Sand	5,312.60	126	164	5,168	5196.56	0.80	5196.59	0.80	5196.59	0.80	5196.54	0.81	5196.49	0.81
UMW-4	68 Sand	5,312.70	222	252	5,076	5187.65	0.10	5187.37	0.10	5187.47	0.10	5187.31	0.10	5191.19	0.06

ft amsl - feet above mean sea level
ft bgs - feet below ground surface
* - Positive value indicates a downward hydraulic gradient (heads decrease with depth) and negative value indicates an upward hydraulic gradient (head increase with depth)

Table 2.7.3-1 Water Quality Data from MRSW-1

MRSW-1				
Parameters	**11/3/2006**	**3/23/2007**	**6/15/2007**	**Average**
Bicarbonate as HCO3, mg/L	1140	814	391	782
Carbonate as CO3, mg/L	19	43	50	37
Chloride, mg/L	10	3	3	5
Conductivity, umhos/cm	1940	1260	714	1305
Fluoride, mg/L	0.5	0.7	0.4	0.5
pH, s.u.	8.48	9.06	9.44	8.99
Solids, Total Dissolved TDS @ 180 C, mg/L	1160	772	472	801
Sulfate, mg/L	39	1	2	14
Gross Alpha, pci/L	6.8	1.0		3.9
Gross Beta, pci/L	21.8	10.3		16.05
Lead 210, pci/L	170*	1.0	1.0	57.3
Polonium 210, pci/L	<1.0	<1.0	<1.0	<1.0
Radium 226, pci/L	<0.2	<0.2	<0.2	<0.2
Radium 228, pci/L	<1.0	<1.0	<1.0	<1.0
Thorium 230, pci/L	<.2	<0.2	<0.2	<0.2
Nitrogen, Ammonia as N, mg/L	0.15	0.08	0.12	0.12
Nitrogen, Nitrate+Nitrite as N, mg/L	0.8	<0.1	<0.1	0.3
Aluminum, mg/L		<0.01	1.1	0.6
Arsenic, mg/L	0.002	0.002	0.006	0.003
Barium, mg/L	0.5	0.5	0.1	0.4
Boron, mg/L	<0.1	<0.1	<0.1	<0.1
Cadmium, mg/L	<0.005	<0.005	<0.005	<0.005
Calcium, mg/L	43	13	7	21
Chromium, mg/L	<0.05	<0.05	<0.05	<0.05
Copper, mg/L	<0.01	<0.01	<0.01	<0.01
Iron, mg/L	0.07	0.07	0.6	0.25
Lead, mg/L	<0.05	<0.001	<0.001	<0.05
Magnesium, mg/L	56	35	14	35
Manganese, mg/L	<0.01	<0.01	<0.01	<0.01
Mercury, mg/L	<0.001	<0.001	<0.001	<0.001
Molybdenum, mg/L	<0.1	<0.1	<0.1	<0.1
Nickel, mg/L	<0.05	<0.05	<0.05	<0.05
Potassium, mg/L	17	11	7	12
Selenium, mg/L	<0.001	<0.001	<0.0002	<0.0002
Silica, mg/L	4.7	2.3	8.4	5.1
Sodium, mg/L	355	243	133	244
Uranium, mg/L	0.0052	0.0007	0.0006	0.0022
Vanadium, mg/L	<0.1	<0.1	<0.1	<0.1
Zinc, mg/L	<0.01	<0.01	<0.01	<0.01
Iron, TOTAL mg/L	0.26	0.38	1.31	0.65
Manganese, TOTAL mg/L	0.01	0.02	0.04	0.02
Lead 210, suspended pci/L	<2.0	<1.0	<1.0	<1.0
Polonium 210 suspended, pci/L	<2.0	<1.0	<1.0	<1.0
Radium 226 suspended, pci/L	<0.4	<0.2	<0.2	<0.2
Thorium 230 suspended, pci/L	<0.4	<0.2	<0.2	<0.2
Uranium suspended, pci/L	<0.0003	<0.0003	<0.0003	<0.0003

* Anomalous value considered analytical error.

Table 2.7.3-2 Water Quality Data from MRSW-2

MRSW-2				
Parameters	**10/25/2006**	**3/23/2007**	**6/15/2007**	**Average**
Bicarbonate as HCO3, mg/L	1010	748	532	763
Carbonate as CO3, mg/L	52	22	33	36
Chloride, mg/L	9	3	2	5
Conductivity, umhos/cm	1520	1120	870	1170
Fluoride, mg/L	0.7	0.6	0.4	0.6
pH, s.u.	8.96	8.80	9.13	8.96
Solids, Total Dissolved TDS @ 180 C, mg/L	996	672	520	729
Sulfate, mg/L	1	<1.0	10	4
Gross Alpha, pci/L	3.0	1.5	0	2.25
Gross Beta, pci/L	14.0	9.7	0	11.85
Lead 210, pci/L	<1.0	<1.0	<1.0	<1.0
Polonium 210, pci/L	<1.0	<1.0	<1.0	<1.0
Radium 226, pci/L	<0.2	<0.2	<0.2	<0.2
Radium 228, pci/L	<1.0	<1.0	<1.0	<1.0
Thorium 230, pci/L	<0.2	<0.2	<0.2	<0.2
Nitrogen, Ammonia as N, mg/L	0.17	<0.05	<0.05	<0.05
Nitrogen, Nitrate+Nitrite as N, mg/L	<0.1	<0.1	<0.1	<0.1
Aluminum, mg/L		<0.1	0.1	0.1
Arsenic, mg/L	0.002	0.002	0.003	0.002
Barium, mg/L	0.8	0.5	0.1	0.5
Boron, mg/L	<0.1	<0.1	<0.1	<0.1
Cadmium, mg/L	<0.005	<0.005	<0.005	<0.005
Calcium, mg/L	18	22	11	17
Chromium, mg/L	<0.05	<0.05	<0.05	<0.05
Copper, mg/L	0.01	0.05	0.01	0.02
Iron, mg/L	0.07	0.15	0.11	0.11
Lead, mg/L	0.05	0.007	0.001	0.019
Magnesium, mg/L	43	28	20	30
Manganese, mg/L	0.01	0.02	0.01	0.02
Mercury, mg/L	<0.001	<0.001	<0.001	<0.001
Molybdenum, mg/L	<0.1	<0.1	<0.1	<0.1
Nickel, mg/L	<0.05	<0.05	<0.05	<0.05
Potassium, mg/L	14	10	7	10
Selenium, mg/L	<0.001	<0.001	<0.002	<0.002
Silica, mg/L	3.8	3.0	0.9	2.6
Sodium, mg/L	349	208	157	238
Uranium, mg/L	0.0003	0.0005	0.0006	0.000467
Vanadium, mg/L	<0.1	<0.1	<0.1	<0.1
Zinc, mg/L	0.01	0.02	0.02	0.015
Iron, TOTAL mg/L	0.07	0.04	0.36	0.157
Manganese, TOTAL mg/L	0.01	0.01	0.02	0.013
Lead 210, TOTAL pci/L	<1.0	<1.0	<1.0	<1.0
Polonium 210 suspended, pci/L	<1.0	<1.0	<1.0	<1.0
Radium 226 suspended, pci/L	<0.2	<0.2	<0.2	<0.2
Thorium 230 suspended, pci/L	<0.2	<0.2	<0.2	<0.2
Uranium suspended, pci/L	<0.0003	<0.0003	<0.0003	<0.0003

Table 2.7.3-3 Water Quality Data from MRSW-3

MRSW-3				
Parameters	**10/25/2006**	**3/22/2007**	**6/14/2007**	**Average**
Bicarbonate as HCO3, mg/L	358	92	33	161
Carbonate as CO3, mg/L	8	9	4	7
Chloride, mg/L	11	2	<1.0	5
Conductivity, umhos/cm	928	544	609	694
Fluoride, mg/L	0.9	0.2	0.4	0.5
pH, s.u.	8.60	9.25	9.45	9.10
Solids, Total Dissolved TDS @ 180 C, mg/L	560	5.5	414	327
Sulfate, mg/L	214	189	254	219
Gross Alpha, pci/L	12.7	7.9		10.3
Gross Beta, pci/L	13.5	9.7		11.6
Lead 210, pci/L	<1.0	<1.0	<1.0	<1.0
Polonium 210, pci/L	<1.0	<1.0	<1.0	<1.0
Radium 226, pci/L	<0.2	<0.2	<0.2	<0.2
Radium 228, pci/L	<1.0	<1.0	1.9	1.3
Thorium 230, pci/L	<0.2	<0.2	<0.2	<0.2
Nitrogen, Ammonia as N, mg/L	0.09	0.06	0.09	0.08
Nitrogen, Nitrate+Nitrite as N, mg/L	<0.1	<0.1	<0.1	<0.1
Aluminum, mg/L		<0.1	<0.1	<0.1
Arsenic, mg/L	0.002	0.002	0.003	0.002
Barium, mg/L	0.1	<0.1	<0.1	0.1
Boron, mg/L	<0.1	<0.1	<0.1	<0.1
Cadmium, mg/L	<0.005	<0.005	<0.005	<0.005
Calcium, mg/L	42	60	48	50
Chromium, mg/L	<0.05	<0.05	<0.05	<0.05
Copper, mg/L	<0.01	<0.01	<0.01	<0.01
Iron, mg/L	0.16	<0.03	0.05	0.08
Lead, mg/L	<0.05	<0.001	<0.001	<0.05
Magnesium, mg/L	18	13	18	16
Manganese, mg/L	<0.01	<0.01	<0.01	<0.01
Mercury, mg/L	<0.001	<0.001	<0.001	<0.001
Molybdenum, mg/L	<0.1	<0.1	<0.1	<0.1
Nickel, mg/L	<0.05	<0.05	<0.05	<0.05
Potassium, mg/L	8	8	4	7
Selenium, mg/L	<0.001	0.001	<0.001	0.001
Silica, mg/L	2.9	8.3	3.2	4.8
Sodium, mg/L	173	32	46	84
Uranium, mg/L	0.0130	0.0119	0.0043	0.0097
Vanadium, mg/L	<0.1	<0.1	<0.1	<0.1
Zinc, mg/L	<0.01	<0.01	<0.01	<0.01
Iron, TOTAL mg/L	0.33	0.10		0.22
Manganese, TOTAL mg/L	0.01	0.03		0.015
Lead 210, suspended pci/L	<1.0	<1.0	<1.0	<1.0
Polonium 210 suspended, pci/L	<1.0	<1.0	<1.0	<1.0
Radium 226 suspended, pci/L	<0.2	<0.2	<0.2	<0.2
Thorium 230 suspended, pci/L	<0.2	<0.2	<0.2	<0.2
Uranium suspended, pci/L	<0.0003	<0.0003	<0.003	<0.003

Table 2.7.3-4 Water Quality Data from MRSW-4

MRSW-4				
Parameters	**10/25/2006**	**3/27/2007**	**6/14/2007**	**Average**
Bicarbonate as HCO3, mg/L	363	156	77	199
Carbonate as CO3, mg/L	24	23	15	21
Chloride, mg/L	23	7	2	11
Conductivity, umhos/cm	1500	792	968	1087
Fluoride, mg/L	0.6	0.5	0.4	0.5
pH, s.u.	9.06	9.41	9.63	9.37
Solids, Total Dissolved TDS @ 180 C, mg/L	984	504	644	711
Sulfate, mg/L	461	230	360	350.3333
Gross Alpha, pci/L	5.6	2.5		4.05
Gross Beta, pci/L	11.9	7.6		9.75
Lead 210, pci/L	<1.0	<1.0	<1.0	1.0
Polonium 210, pci/L	<1.0	<1.0	<1.0	<1.0
Radium 226, pci/L	<0.2	<0.2	<0.2	0.2
Radium 228, pci/L	<1.0	<1.0	<1.0	1.0
Thorium 230, pci/L	<0.2	<0.2	<0.2	<0.2
Nitrogen, Ammonia as N, mg/L	0.52	0.20	0.09	0.27
Nitrogen, Nitrate+Nitrite as N, mg/L	<0.1	<0.1	<0.1	0.1
Aluminum, mg/L		<0.1	<0.1	0.1
Arsenic, mg/L	0.006	0.006	0.005	0.006
Barium, mg/L	0.2	0.1	0.1	0.1
Boron, mg/L	<0.1	<0.1	<0.1	0.1
Cadmium, mg/L	<0.005	<0.005	<0.005	<0.005
Calcium, mg/L	24	26	27	26
Chromium, mg/L	<0.05	<0.05	<0.05	<0.05
Copper, mg/L	<0.01	<0.01	<0.01	0.01
Iron, mg/L	0.32	0.03	0.03	0.13
Lead, mg/L	<0.05	<0.001	<0.001	0.050
Magnesium, mg/L	25	18	24	22
Manganese, mg/L	0.02	0.02	0.02	0.02
Mercury, mg/L	<0.001	<0.001	<0.001	<0.001
Molybdenum, mg/L	<0.1	<0.1	<0.1	<0.1
Nickel, mg/L	<0.05	<0.05	<0.05	<0.05
Potassium, mg/L	10	8	7	8
Selenium, mg/L	<0.001	<0.001	<0.001	0.001
Silica, mg/L	3.8	12.8	3.7	6.8
Sodium, mg/L	320	114	133	189
Uranium, mg/L	0.0069	0.0034	0.0028	0.0044
Vanadium, mg/L	<0.1	<0.1	<0.1	<0.1
Zinc, mg/L	<0.01	<0.01	<0.01	0.010
Iron, TOTAL mg/L	0.40	0.07		0.16
Manganese, TOTAL mg/L	0.02	0.12		0.05
Lead 210, suspended pci/L	<1.0	<1.0	<1.0	<1.0
Polonium 210 suspended, pci/L	<1.0	<1.0	<1.0	<1.0
Radium 226 suspended, pci/L	<0.2	<0.2	<0.2	<0.2
Thorium 230 suspended, pci/L	<0.2	<0.2	<0.2	<0.2
Uranium suspended, pci/L	<0.0003	<0.0003	<0.0003	<0.0003

Table 2.7.3-5 Water Quality Data from MRSW-5

MRSW-5				
Parameters	**11/3/2006**	**3/22/2007**	**6/15/2007**	**Average**
Bicarbonate as HCO3, mg/L	1410	924	858	1064
Carbonate as CO3, mg/L	155	24	11	63
Chloride, mg/L	6	7	10	8
Conductivity, umhos/cm	2560	1450	1520	1843
Fluoride, mg/L	1.2	0.5	0.4	0.7
pH, s.u.	9.29	8.66	8.46	8.80
Solids, Total Dissolved TDS @ 180 C, mg/L	1590	890	998	1159
Sulfate, mg/L	9	20	157	62
Gross Alpha, pci/L	11.0	2.4		6.7
Gross Beta, pci/L	32.7	11.0		21.85
Lead 210, pci/L	9.9	<1.0	<1.0	4.0
Polonium 210, pci/L	<1.0	<1.0	<1.0	<1.0
Radium 226, pci/L	0.2	1.5	2.3	1.3
Radium 228, pci/L	<.1	<1.0	<1.0	<1.0
Thorium 230, pci/L	<.2	<0.2	<0.2	<0.2
Nitrogen, Ammonia as N, mg/L	0.27	0.15	0.19	0.20
Nitrogen, Nitrate+Nitrite as N, mg/L	0.9	<0.1	<0.1	0.4
Aluminum, mg/L		<0.1	<0.1	<0.1
Arsenic, mg/L	0.008	0.003	0.004	0.005
Barium, mg/L	0.5	0.5	0.3	0.2
Boron, mg/L	0.1	<0.1	<0.1	0.1
Cadmium, mg/L	<0.005	<0.005	<0.005	<0.005
Calcium, mg/L	9	45	41	32
Chromium, mg/L	<0.05	<0.05	<0.05	<0.05
Copper, mg/L	<0.01	<0.01	<0.01	<0.01
Iron, mg/L	0.92	0.05	0.08	0.35
Lead, mg/L	<0.05	<0.001	<0.001	<0.05
Magnesium, mg/L	73	39	50	54
Manganese, mg/L	0.02	<0.01	0.03	0.03
Mercury, mg/L	<0.001	<0.001	<0.001	<0.001
Molybdenum, mg/L	<0.1	<0.1	<0.1	<0.1
Nickel, mg/L	<0.05	<0.05	<0.05	<0.05
Potassium, mg/L	22	12	13	16
Selenium, mg/L	<0.001	<0.001	0.004	0.002
Silica, mg/L	9.3	5.2	8.1	7.5
Sodium, mg/L	559	255	230	348
Uranium, mg/L	0.0010	0.0029	0.0027	0.0022
Vanadium, mg/L	<0.1	<0.1	<0.1	<0.1
Zinc, mg/L	<0.01	<0.01	0.01	0.01
Iron, TOTAL mg/L	1.11	0.11	0.12	0.45
Manganese, TOTAL mg/L	0.05	0.01	0.06	0.04
Lead 210, suspended pci/L	<2.0	<1.0	<1.0	<1.0
Polonium 210 suspended, pci/L	<2.0	<1.0	<1.0	<1.0
Radium 226 suspended, pci/L	<0.4	<0.2	2.3	0.97
Thorium 230 suspended, pci/L	<0.4	<0.2	<0.2	<0.2
Uranium suspended, pci/L	<0.0003	<0.0003	<0.0003	<0.0003

Table 2.7.3-6 Water Quality Data from MRSW-6

MRSW-6			
Parameters	**3/22/2007**	**6/15/2007**	**Average**
Bicarbonate as HCO3, mg/L	351	563	457
Carbonate as CO3, mg/L	7	114	61
Chloride, mg/L	2	3	3
Conductivity, umhos/cm	538	1140	839
Fluoride, mg/L	0.3	0.7	0.5
pH, s.u.	8.52	9.64	9
Solids, Total Dissolved TDS @ 180 C, mg/L	326	754	540
Sulfate, mg/L	10	2	6
Gross Alpha, pci/L	1.1		1.1
Gross Beta, pci/L	6.9		6.9
Lead 210, pci/L	<1.0	<1.0	<1.0
Polonium 210, pci/L	<1.0	<1.0	<1.0
Radium 226, pci/L	<0.2	1.5	0.9
Radium 228, pci/L	<1.0	<1.0	<1.0
Thorium 230, pci/L	<0.2	<0.2	<0.2
Nitrogen, Ammonia as N, mg/L	0.13	0.15	0.14
Nitrogen, Nitrate+Nitrite as N, mg/L	<0.1	<0.1	<0.1
Aluminum, mg/L	0.4	1	0.7
Arsenic, mg/L	0.002	0.006	0.004
Barium, mg/L	0.4	0.2	0.3
Boron, mg/L	<0.1	<0.1	<0.1
Cadmium, mg/L	<0.005	<0.005	<0.005
Calcium, mg/L	26	9	18
Chromium, mg/L	<0.05	<0.05	<0.05
Copper, mg/L	<0.01	<0.01	<0.01
Iron, mg/L	0.21	0.44	0.33
Lead, mg/L	<0.001	0.001	0.001
Magnesium, mg/L	10	15	13
Manganese, mg/L	<0.01	0.02	0.02
Mercury, mg/L	<0.001	<0.001	<0.001
Molybdenum, mg/L	<0.1	<0.1	<0.1
Nickel, mg/L	<0.05	<0.05	<0.05
Potassium, mg/L	7	6	7
Selenium, mg/L	<0.001	<0.002	<0.002
Silica, mg/L	9.5	5.6	7.6
Sodium, mg/L	77	232	155
Uranium, mg/L	<0.0003	0.0003	0.0003
Vanadium, mg/L	<0.1	<0.1	<0.1
Zinc, mg/L	0.01	0.01	0.01
Iron, TOTAL mg/L	0.51	0.72	0.62
Manganese, TOTAL mg/L	0.02	0.04	0.03
Lead 210, suspended pci/L	<1.0	<1.0	<1.0
Polonium 210 suspended, pci/L	<1.0	<1.0	<1.0
Radium 226 suspended, pci/L	<0.2	0.4	0.3
Thorium 230 suspended, pci/L	<0.2	<0.2	<0.2
Uranium suspended, pci/L	<0.0003	<0.0003	<0.0003

Table 2.7.3-7 Water Quality Data from MRSW-7

MRSW-7			
Parameters	**10/25/2006**	**6/14/2007**	**Avevrage**
Bicarbonate as HCO3, mg/L	809	520	665
Carbonate as CO3, mg/L	12	22	17
Chloride, mg/L	9	2	6
Conductivity, umhos/cm	1120	837	979
Fluoride, mg/L	0.5	0.5	0.5
pH, s.u.	8.42	8.96	9
Solids, Total Dissolved TDS @ 180 C, mg/L	706	586	646
Sulfate, mg/L	23	3	13
Gross Alpha, pci/L	5.4		5.4
Gross Beta, pci/L	13.1		13.1
Lead 210, pci/L	<1.0	<1.0	<1.0
Polonium 210, pci/L	<1.0	<1.0	<1.0
Radium 226, pci/L	<0.2	<0.2	<0.2
Radium 228, pci/L	<1.0	<1.0	<1.0
Thorium 230, pci/L	<0.2	<0.2	<0.2
Nitrogen, Ammonia as N, mg/L	0.10	0.08	0.09
Nitrogen, Nitrate+Nitrite as N, mg/L	<0.1	<0.1	<0.1
Aluminum, mg/L		0.5	0.3
Arsenic, mg/L	0.003	0.004	0.004
Barium, mg/L	0.5	0.3	0.4
Boron, mg/L	<0.1	<1.0	<1.0
Cadmium, mg/L	<0.005	<0.005	<0.005
Calcium, mg/L	27	15	21
Chromium, mg/L	<0.05	<0.05	<0.05
Copper, mg/L	<0.01	<0.01	<0.01
Iron, mg/L	0.70	0.59	0.65
Lead, mg/L	<0.05	<0.001	<0.001
Magnesium, mg/L	18	10	14
Manganese, mg/L	0.02	0.01	0.02
Mercury, mg/L	<0.001	<0.001	<0.001
Molybdenum, mg/L	<0.1	<0.1	<0.1
Nickel, mg/L	<0.05	<0.05	<0.05
Potassium, mg/L	10	7	9
Selenium, mg/L	<0.001	<0.001	<0.001
Silica, mg/L	8.4	7.5	8.0
Sodium, mg/L	263	173	218
Uranium, mg/L	0.0006	0.0004	0.0005
Vanadium, mg/L	<0.1	<0.1	<0.1
Zinc, mg/L	<0.01	<0.01	<0.01
Iron, TOTAL mg/L	0.64	0.73	0.69
Manganese, TOTAL mg/L	<0.01	0.04	0.03
Lead 210, suspended pci/L	<1.0	<1.0	<1.0
Polonium 210 suspended, pci/L	<1.0	<1.0	<1.0
Radium 226 suspended, pci/L	<0.2	<0.2	<0.2
Thorium 230 suspended, pci/L	<0.2	<0.2	<0.2
Uranium suspended, pci/L	0.0007	<0.0003	<0.0003

Table 2.7.3-8 Water Quality Data from MRSW-8

MRSW-8				
Parameters	**10/25/2006**	**3/23/2007**	**6/14/2007**	**Average**
Bicarbonate as HCO3, mg/L	420	458	327	402
Carbonate as CO3, mg/L	1670	44	26	580
Chloride, mg/L	21	2	<1.0	8
Conductivity, umhos/cm	3220	796.0	569.0	1528
Fluoride, mg/L	2.2	0.6	0.4	1.1
pH, s.u.	9.65	9.32	9.23	9.40
Solids, Total Dissolved TDS @ 180 C, mg/L	2190	508	354	1017
Sulfate, mg/L	10	<1.0	14	8
Gross Alpha, pci/L	4.3	2.4		3.35
Gross Beta, pci/L	20.9	10.1		15.5
Lead 210, pci/L	<1.0	<1.0	<1.0	<1.0
Polonium 210, pci/L	<1.0	<1.0	<1.0	<1.0
Radium 226, pci/L	<0.2	<0.2	<0.2	<0.2
Radium 228, pci/L	<1.0	<1.0	<1.0	<1.0
Thorium 230, pci/L	<0.2	<0.2	<0.2	<0.2
Nitrogen, Ammonia as N, mg/L	0.86	0.09	<0.05	0.33
Nitrogen, Nitrate+Nitrite as N, mg/L	<0.1	<0.1	<0.1	<0.1
Aluminum, mg/L		0.1	0.2	0.1
Arsenic, mg/L	0.025	0.005	0.004	0.011
Barium, mg/L	0.6	0.1	0.1	0.3
Boron, mg/L	0.1	<0.1	<0.1	0.1
Cadmium, mg/L	<0.005	<0.005	<0.005	<0.005
Calcium, mg/L	6	13	11	10
Chromium, mg/L	<0.05	<0.05	<0.05	<0.05
Copper, mg/L	<0.01	<0.01	<0.01	<0.01
Iron, mg/L	0.48	0.09	0.39	0.32
Lead, mg/L	<0.05	<0.001	<0.001	<0.05
Magnesium, mg/L	53	15	11	26
Manganese, mg/L	0.02	<0.01	<0.01	0.01
Mercury, mg/L	<0.001	<0.001	<0.001	<0.001
Molybdenum, mg/L	<0.1	<0.1	<0.1	<0.1
Nickel, mg/L	<0.05	<0.05	<0.05	<0.05
Potassium, mg/L	19	10	7	12
Selenium, mg/L	0.002	0.001	0.001	0.0013
Silica, mg/L	6.1	7.1	3.7	5.6
Sodium, mg/L	842	158	106	369
Uranium, mg/L	0.0040	0.0009	0.001	0.0020
Vanadium, mg/L	<0.1	<0.1	<0.1	<0.1
Zinc, mg/L	<0.01	<0.01	<0.01	<0.01
Iron, TOTAL mg/L	0.20	0.86	0.063	0.374
Manganese, TOTAL mg/L	<0.01	0.01	0.02	0.01
Lead 210, suspended pci/L	6.3	<1.0	<1.0	<1.0
Polonium 210 suspended, pci/L	<1.0	<1.0	<1.0	<1.0
Radium 226 suspended, pci/L	<0.2	<0.2	<0.2	<0.2
Thorium 230 suspended, pci/L	<0.2	<0.2	<0.2	<0.2
Uranium suspended, pci/L	0.0004	<0.0003	<0.003	<0.003

Table 2.7.3-9 Water Quality Data from MRSW-9

MRSW-9			
Parameters	**3/21/2007**	**6/14/2007**	**Average**
Bicarbonate as HCO3, mg/L	131	67	99
Carbonate as CO3, mg/L	15	12	14
Chloride, mg/L	2.79	<1.0	2
Conductivity, umhos/cm	259	148	204
Fluoride, mg/L	0.2	0.2	0.2
pH, s.u.	9.32	9.16	9
Solids, Total Dissolved TDS @ 180 C, mg/L	148	96	122
Sulfate, mg/L	2	5	4
Gross Alpha, pci/L	1.7		1
Gross Beta, pci/L	3.9		2
Lead 210, pci/L	8.6	<1.0	4.8
Polonium 210, pci/L	<1.0	<1.0	<1.0
Radium 226, pci/L	<0.2	<0.2	<0.2
Radium 228, pci/L	<1.0	<1.0	<1.0
Thorium 230, pci/L	<0.2	<0.2	<0.2
Nitrogen, Ammonia as N, mg/L	<0.05	<0.05	<0.05
Nitrogen, Nitrate+Nitrite as N, mg/L	<0.1	<0.1	<0.1
Aluminum, mg/L	<0.1	0.3	0.2
Arsenic, mg/L	0.002	0.002	0.002
Barium, mg/L	<0.1	<0.1	<0.1
Boron, mg/L	<0.1	<0.1	<0.1
Cadmium, mg/L	<0.005	<0.005	<0.005
Calcium, mg/L	13	15	14
Chromium, mg/L	<0.05	<0.05	<0.05
Copper, mg/L	<0.01	<0.01	<0.01
Iron, mg/L	0.03	0.19	0.11
Lead, mg/L	<0.001	<0.001	<0.001
Magnesium, mg/L	5	4	5
Manganese, mg/L	<0.01	<0.01	<0.01
Mercury, mg/L	<0.001	<0.001	<0.001
Molybdenum, mg/L	<0.1	<0.1	<0.1
Nickel, mg/L	<0.05	<0.05	<0.05
Potassium, mg/L	6	3	5
Selenium, mg/L	<0.001	<0.001	<0.001
Silica, mg/L	6.9	3.4	5.2
Sodium, mg/L	36	8	22
Uranium, mg/L	0.0016	0.0018	0.0017
Vanadium, mg/L	<0.1	<0.1	<0.1
Zinc, mg/L	<0.01	<0.01	<0.01
Iron, TOTAL mg/L	0.08	0.19	0.14
Manganese, TOTAL mg/L	<0.01	<0.01	<0.01
Lead 210, suspended pci/L	<1.0	<1.0	<1.0
Polonium 210 suspended, pci/L	<1.0	<1.0	<1.0
Radium 226 suspended, pci/L	<0.2	<0.2	<0.2
Thorium 230 suspended, pci/L	<0.2	<0.2	<0.2
Uranium suspended, pci/L	<0.0003	<0.0003	<0.0003

Table 2.7.3-10 Water Quality Data - Surface Water - Seasonal Averages

Parameter	Fall	Late-March	Mid-June
Bicarbonate as HCO3, mg/L	787	459	374
Carbonate as CO3, mg/L	277	23	32
Chloride, mg/L	12.7	3.6	2.8
Conductivity, umhos/cm	1827	845	819
Fluoride, mg/L	0.9	0.5	0.4
pH, s.u.	8.92	9.04	9.23
Solids, Total Dissolved TDS @ 180 C, mg/L	1169	478	538
Sulfate, mg/L	108	57	90
Gross Alpha, pci/L	7.0	2.6	
Gross Beta, pci/L	18.3	8.7	
Lead 210, pci/L	2.5	2.0	1.0
Polonium 210, pci/L	<1.0	<1.0	<1.0
Radium 226, pci/L	<0.2	0.4	0.6
Radium 228, pci/L	<1.0	<1.0	1.9
Thorium 230, pci/L	<0.2	<0.2	<0.2
Nitrogen, Ammonia as N, mg/L	0.31	0.10	0.10
Nitrogen, Nitrate+Nitrite as N, mg/L	0.3	<0.1	<0.1
Aluminum, mg/L		0.1	0.4
Arsenic, mg/L	0.007	0.003	0.004
Barium, mg/L	0.5	0.3	0.2
Boron, mg/L	0.1	<0.1	<0.1
Cadmium, mg/L	<0.005	<0.005	<0.005
Calcium, mg/L	24	27	20
Chromium, mg/L	<0.05	<0.05	<0.05
Copper, mg/L	<0.01	0.015	<0.01
Iron, mg/L	0.39	0.08	0.28
Lead, mg/L	<0.05	0.002	0.001
Magnesium, mg/L	41	20	18
Manganese, mg/L	0.02	0.01	0.01
Mercury, mg/L	<0.001	<0.001	<0.001
Molybdenum, mg/L	<0.1	<0.1	<0.1
Nickel, mg/L	<0.05	<0.05	<0.05
Potassium, mg/L	14	9	7
Selenium, mg/L	0.001	0.001	0.002
Silica, mg/L	5.6	6.9	4.9
Sodium, mg/L	409	140	135
Uranium, mg/L	0.004429	0.002775	0.0016111
Vanadium, mg/L	<0.1	<0.1	<0.1
Zinc, mg/L	<0.01	0.01	0.01
Iron, TOTAL mg/L	0.43	0.27	0.50
Manganese, TOTAL mg/L	0.02	0.03	0.03
Lead 210, suspended pci/L	1.8	<1.0	<1.0
Polonium 210 suspended, pci/L	<1.0	<1.0	<1.0
Radium 226 suspended, pci/L	<0.2	<0.2	0.3
Thorium 230 suspended, pci/L	<0.2	<0.2	<0.2
Uranium suspended, pci/L	0.0004	<0.0003	<0.0003

Table 2.7.3-11 Water Quality Data - Surface Water - Average Concentrations

Parameter	Overall Average
Bicarbonate as HCO3, mg/L	523
Carbonate as CO3, mg/L	101
Chloride, mg/L	5.9
Conductivity, umhos/cm	1122
Fluoride, mg/L	0.6
pH, s.u.	9.08
Solids, Total Dissolved TDS @ 180 C, mg/L	702
Sulfate, mg/L	84
Gross Alpha, pci/L	4.6
Gross Beta, pci/L	13.1
Lead 210, pci/L	1.7
Polonium 210, pci/L	<1.0
Radium 226, pci/L	0.4
Radium 228, pci/L	1.0
Thorium 230, pci/L	<0.2
Nitrogen, Ammonia as N, mg/L	0.16
Nitrogen, Nitrate+Nitrite as N, mg/L	0.2
Aluminum, mg/L	0.3
Arsenic, mg/L	0.005
Barium, mg/L	0.3
Boron, mg/L	0.1
Cadmium, mg/L	<0.005
Calcium, mg/L	24
Chromium, mg/L	<0.05
Copper, mg/L	0.01
Iron, mg/L	0.24
Lead, mg/L	0.016
Magnesium, mg/L	26
Manganese, mg/L	0.01
Mercury, mg/L	<0.001
Molybdenum, mg/L	<0.1
Nickel, mg/L	<0.05
Potassium, mg/L	10
Selenium, mg/L	0.001
Silica, mg/L	5.8
Sodium, mg/L	217
Uranium, mg/L	0.0028
Vanadium, mg/L	<0.1
Zinc, mg/L	0.01
Iron, TOTAL mg/L	0.39
Manganese, TOTAL mg/L	0.03
Lead 210, suspended pci/L	1.2
Polonium 210 suspended, pci/L	<1.0
Radium 226 suspended, pci/L	0.2
Thorium 230 suspended, pci/L	<0.2
Uranium suspended, pci/L	<0.0003

Table 2.7.3-13
Well Completion Data - Conoco Monitoring Program

Well No.	Easting	Northing	Completion Zone	Collar Elevation	Total Depth	Casing Depth	Perforated Interval	Gravel Pack	Drill Bit	Casing Diameter	Type Casing	State Permit No.	DateDrilled
	(ft)	(ft)		(ft amsl)	(ft bgs)	(ft bgs)	(ft bgs)		(in)	(in)			
1	322,598	1,058,010	70 SS	5,331	240	240	200-240	-	6-1/4	5"	PVC	39649	9/17/1977
885	317,898	1,058,399	70 SS	5,350	240	240	180-240	X	9-7/8	5"	PVC	39648	7/22/1977
886	317,819	1,058,258	70 SS	5,349	240	240	180-240	X	8-3/4	3"	PVC	-	7/21/1977
887	318,000	1,058,278	68 SS	5,347	320	320	290-320	X	8-3/4	3"	PVC	-	7/20/1977
888	317,910	1,058,398	70 SS	5,352	250	250	180-240	X	8-3/4	3"	PVC	-	7/21/1977
889	315,219	1,057,936	70 SS	5,334	260	260	200-260	X	8-3/4	3"	PVC	39653	7/29/1977
890	317,428	1,060,376	70-68 SS	5,410	330	330	240-330	X	8-3/4	3"	PVC	39654	7/29/1977
893	317,890	1,058,318	70 SS	5,348	240	240	153-240	X	9-0	5"	Steel	-	11/21/1978
1805	322,638	1,058,047	70 SS	5,331	240	240	120-240	X	8-3/4	3"	PVC	-	7/22/1977
1806	322,578	1,057,946	70 SS	5,324	220	220	120-200	X	8-3/4	3"	PVC	-	7/21/1977
1807	322,729	1,057,976	68 SS	5,328	290	290	250-290	X	8-3/4	3"	PVC	-	7/22/1977
1808	322,427	1,060,516	70-68 SS	5,377	275	275	195.275	X	9-7/8	5"	PVC	39651	7/28/1977
1809	325,349	1,058,177	70 SS	5,356	230	230	135-225	X	8-3/4	3"	PVC	39652	7/28/1977
1810	320,128	1,057,966	70 SS	5,378	265	265	200-260	X	8-3/4	3"	PVC	39650	7/29/1977
1814	320,620	1,056,541	70 SS	5,345	207	207	143-207	-	9-7/8	5"	Steel	-	11/2/1978
1815	320,550	1,056,471	70 SS	5,348	208	208	142-208	X	5-1/8	3"	PVC	-	11/8/1978
1816	320,701	1,056,501	70 SS	5,343	207	207	138-207	X	5-1/8	3"	PVC	-	11/8/1978
1817	320,610	1,056,752	70SS	5,350	233	233	143-233	X	5-1/8	3"	PVC	-	11/8/1978
22-2	322,809	1,054,603	70 SS	5,287	165	165	85-165	X	8-3/4	3"	PVC	39655	8/1/1977
8-3	318,060	1,054,523	70-68 SS	5,308	175	175	105-175	X	9-7/8	5"	PVC	39656	8/1/1977
1821	321,534	1,060,275	Roland Coal	5,355	1200	1200	1120-1200	-	8-3/4	6"	Steel	-	10/22/1979
1822	321,574	1,060,356	50-40 SS	5,355	740	740	560-600, 640-680, 700-720	-	8-3/4	6"	Steel	-	10/26/1979

ft - feet in - inches
ft amsl - feet above mean sea level
ft bgs - feet below ground surface

Table 2.7.3-15
Well Completion Data - EMC Monitoring Program

Well	Easting	Northing	Completion Zone	GS Elevation	Stick-up	TOC Elevation	Pilot TD	Casing Depth	Screen Top	Screen Bottom	Screen Interval
	(ft)	(ft)		(ft amsl)	(ft)	(ft amsl)	(ft bgs)	(ft bgs)	(ft bgs)	(ft bgs)	(ft)
MW-1	320,100	1,057,961	70 SS	5,379.0	0.75	5,378.3	280	180	182	250	68
MW-2	322,635	1,057,708	70 SS	5,312.3	0.95	5,311.4	200	128	130	195	65
MW-3	317,948	1,060,543	70 SS	5,426.9	1.75	5,425.2	320	267	269	317	48
MW-4	318,697	1,056,272	70 SS	5,312.6	0.50	5,312.1	220	124	126	164	38
MW-5	321,452	1,056,678	70 SS	5,328.2	1.20	5,327.0	220	126	128	198	70
MW-6	323,791	1,058,277	70 SS	5,351.9	1.10	5,350.8	280	175	177	257	80
MW-7	322,535	1,056,299	70 SS	5,311.1	0.80	5,310.3	200	88	90	177	87
MW-8	317,921	1,057,961	70 SS	5,335.4	1.50	5,333.9	220	150	152	205	53
MW-9	317,099	1,059,198	70 SS	5,365.9	1.00	5,364.9	280	190	192	252	60
MW-10	320,115	1,059,378	70 SS	5,366.6	1.30	5,365.3	280	183	185	250	65
MW-11	317,693	1,061,868	70 SS	5,413.2	1.50	5,411.7	340	279	281	331	50
PW-1	320,209	1,057,961	70SS	5,373.8	0.50	5,373.3	280	174	176	246	70
OMW-1	320,090	1,057,961	72 SS	5,379.7	0.80	5,378.9	180	146	148	168	20
OMW-2	322,625	1,057,708	72 SS	5,312.5	0.30	5,312.2	100	59	60	78	18
OMW-3	317,938	1,060,543	72 SS	5,427.0	0.80	5,426.2	250	203	205	245	40
OMW-4	318,687	1,056,272	72 SS	5,312.6	0.35	5,312.3	120	74	76	91	15
UMW-1*	320,110	1,057,961	68SS	5,378.7	1.00	5,377.7	340	280	282	312	30
UMW-2	322,645	1,057,708	68SS	5,312.4	1.54	5,310.9	280	228	230	250	20
UMW-3*	317,958	1,060,543	68SS	5,426.5	0.55	5,426.0	380	351	353	378	25
UMW-4	318,707	1,056,272	68SS	5,312.7	1.25	5,311.5	300	220	222	252	30
885	317,898	1,058,399	70 SS	5,350.0	-	-	240	240	180	240	60
1808	322,427	1,060,516	70-68 SS	5,377.0	-	-	275	275	195	275	80
8-3	318,060	1,054,523	70-68 SS	5,308.0	-	-	175	175	105	175	70

ft - feet

ft amsl - feet above mean sea level

ft bgs - feet below ground surface

* The water level in this well was too low for adequate purging prior to sampling.
Analytical samples from this well are considered questionable and are not included in the water quality analysis.

Table 2.7.3-17 Analytical Results - Conoco Baseline Monitoring Program

Well No.	Sample Date	TDS	Conductivity		Temp.	pH		Na	K	Ca	Mg	SO4	Cl	CO3	HCO_3
41N-75W															
22-2	1/3/80	508	725			6.95		13	8	96	23	106	5	0	305
8-3	6/28/79	1,460	1,950	(1,610)	(8)	7.10	(6.85)	8	12	354	58	980	6	0	361
	9/27/79	1,426	1,910	(1,660)	(12)	7.30	(6.50)	9	12	278	96	750	6	0	371
	12/6/79	1,566	1,800	(1,680)	(10)	7.23	(7.75)	8	13	245	120	936	6	0	361
	4/9/80	1,398	2,000	(1,750)	(10)	6.75	(7.1)	10	14	251	115	860	12	0	256
42N-75W															
893	11/30/78	975	1,100		(11.1)	7.1		42	10	180	36	470	2	0	235
	6/27/79	820	1,250	(1,080)	(15)	7.54	(7.25)	47	12	158	35	427	6	0	264
	9/27/79	870	1,250	(1,150)	(13)	7.27	(6.95)	43	11	158	37	408	6	0	278
	10/10/79	914	1,240	(985)	(15)	7.45	(7.70)	45	12	160	34	418	6	0	266
	12/21/79	874	1,150	(1,120)	(11)	7.23	(7.65)	44	12	155	40	410	5	0	266
	4/9/80	842	1,350	(1,150)	(11)	7.31	(7.5)	47	12	159	40	460	10	0	281
885	4/12/78(a)	836	1,113			7.53		31.5	8.1	208	33.5	426	3.3	0	281
886	4/12/78(b)	827	1,299			7.44		46.0	9.5	228	43	75	4.9	0	851
887	4/12/78(c)	1,170	1,490			7.66		54.0	9.1	265	56	459	11	0	375
888	4/12/78(d)	855	1,155			7.97		54.0	8.1	180	30	424	6.4	0	311
889	1/3/80	462	640			6.60		12	8	79	23	198	5	0	134
	4/15/80	395	630	(570)	(11)	7.24	(7.0)	8	8	78	21	192	6	0	146
I	4/12/78(a)	286	504			7.87		8.4	7	80	14	72.5	<2.0	0	228
	11/30/78(b)	364	510		(11.4)	6.7		14.0	7.7	81	15	73	1	0	172
	6/27/79	218	440	(363)	(15)	7.90	(7.75)	13	8	47	14	85	6	0	195
	9/29/79	254	464	(442)	(14)	7.68	(7.20)	15	8	54	14	64	3	0	217
	12/21/79	352	515	(473)	(10)	7.15	(7.40)	14	8	67	16	71	4	0	242
	4/16/80	182	295			7.45	(7.6)	7	7	35	9	46	4	0	127
1805	4/12/78(h)	765	996			8.06		60.0	7.7	143	29	433	6.4	0	178
1806	4/12/78(i)	886	1290			7.25		41.0	9.1	234	46	28	4.9	0	975
1807	4/12/1970(j)	680	1100			7.44		35.0	8.4	187	35	98	<2.0	0	663
1808	6/28/79	573	950	(800)	(15)	7.45	(7.20)	69	9	93	19	303	10	0	161
	9/27/79	570	930	(789)	(14)	7.48	(6.45)	69	9	86	17	300	8	0	171
	12/15/79	608	900	(813)	(9)	7.34	(7.65)	63	8	84	17	280	6	0	159
	4/2/80	684	1,010	(988)	(10)	8.04	(8.2)	77	10	115	24	405	8	0	173
1809	4/15/80	877	1,220	(1,160)	(14)	7.61	(7.5)	59	12	104	34	432	8	0	317
1810	4/15/80	824	1,350	(943)	(13)	7.31	(7.6)	47	12	159	40	460	10	0	281
1814	11/30/78(e)	1,006	1,130		(13.5)	6.5		22.0	8.3	190	38	497	3	0	248
	6/27/79	987	1,440	(1,230)	(13)	7.29	(7.05)	42	12	201	45	461	8	0	307
	9/26/79	1,068	1,480	(1,290)	(13)	7.19	(6.80)	45	14	201	46	490	10	0	305
	12/2/79	1,104	1,380	(1,390)	(10)	7.09	(7.85)	41	12	197	51	508	5	0	285
	4/1/80	1,016	1,370	(1,380)	(10)	7.47	(7.3)	44	13	203	52	562	6	0	305
1821	10/25/79	680	1,020	(620)	(15)	7.93	(7.55)	131	19	78	6	136	12	0	427
1822	10/28/79	468	760	(666)	(13)	7.77	(7.60)	90	7	53	8	166	10	0	183

Notes: Concentration in mg/1 except Conductivity, in mhos/cm @ 25°C; Temperature, in °C; pH, in pH units; U, Pb-210, Po-210, Ra-226 and Th-230, in pCi/l

( ) Field Measurements

< Concentration less than value.

(a) Additional parameters for this sample are Silica (as S.0) . 10; Alkalinity (as $CaCO_3$) 188; Total Hardness (as $CaCO_3$)

(b) 219; Redox Potential = 196; Nitrite (as N) = *.05; Phogihos (as P) = *.02; and Total Iron . *1.0.

(c) Additional parameters for this sample are Phosphate = 0.04 and Nitrite = *.01.

(d) Additional parameters for this sample are Phosphate = 0.025 and Nitrite = *.01.

(e) Additional parameters for this sample are Silica (as 5.0,) = 9.9; Alkalinity (as $CaCO_3$) = 232.5; Total Hardness (as

(f) $CaCO_3$) 560; Redox Potential . 206; Nitrite (as N) = 0.13; Ptosphorus (as P) = *.03 and Total Iron 1.3.

(g) Additional parameters for this sample are Silica (as $S.0_2$) = 19.2; Alkalinity (as $CaCO_3$) = 703; Total Hardness (as $CoCO_3$) =

(h) 640; Redox Potential . 208; Nitrite (as N) *.05; Phosphorus (as P) = 0.02; and Total Iron 49.

(i) Additional parameters for this sample are Silica (as 5.0_2) . 8.6; Alkalinity (as $CoCO_3$) . 310; Total Hardness (as $CoCO_3$)

(j) 749; Redox Potential . 207; Nitrite (as N) = *.05; Phos4horus (as P) = *.02; and Total Iron . 1.0.

Table 2.7.3-17 Analytical Results - Conoco Baseline Monitoring Program

Well No.	Al	NH3 as N	As	Ba	Be	B	Cd	Cr	Cu	F	Fe	Pb	Mn
4IN-75W													
22-2	<0.05	0.13	<0.002	<0.02	<0.005	<1.0	<0.002	<0.01	0.003	0.27	1.51	<0.05	0.68
8-3	<0.05	0.11	<0.002	<0.02	<0.005	<1.0	<0.002	<0.01	<0.002	0.03	1.98	<0.05	0.33
	<0.05	0.81	<0.002	<0.02	<0.005	<1.0	<0.002	0.01	0.004	0.07	2.4	<0.05	0.33
	<0.05	0.47	<0.002	<0.02	<0.005	<1.0	<0.002	<0.01	0.002	0.13	2.65	0.07	0.33
	<0.05	0.11	<0.002	<0.02	<0.005	<1.0	0.006	0.03	0.010	0.09	3.75	0.08	0.32
4IN-75W													
893	0.04	0.15	<0.002	0.07	-	0.1	<0.005	0.01	<0.02	0.1	0.3	0.03	0.03
	<0.05	<0.05	<0.002	<0.02	<0.005	<1.0	<0.002	<0.01	<0.002	0.12	4.43	<0.05	0.13
	<0.05	0.13	-	<0.02	-	<1.0	<0.02	<0.01	0.002	0.15	8.7	<0.05	0.17
	<0.05	0.36	<0.002	<0.02	<0.005	<1.0	<0.002	<0.01	<0.002	0.14	7.3	<0.05	0.15
	<0.05	0.13	<0.002	<0.02	<0.005	<1.0	<0.002	<0.01	0.007	0.13	7.55	<0.05	0.16
	<0.05	<0.05	<0.002	<0.02	<0.005	<1.0	<0.005	0.03	<0.005	0.10	7.25	0.05	0.16
885	<0.1	<0.1	0.004	0.19	<0.005	0.2	<0.005	<0.01	<0.01	0.1	0.66	-	0.23
886	<0.1	0.18	0.008	1.5	<0.005	0.2	<0.005	<0.01	<0.01	0.4	5.2	-	2.3
887	<0.1	<0.1	<0.002	0.22	<0.005	0.2	<0.005	<0.01	<0.01	0.2	0.18	-	0.34
888	<0.1	0.65	0.019	0.22	<0.005	0.2	<0.005	<0.01	<0.05	0.2	0.18	-	1.5
889	<0.05	0.05	<0.002	<0.02	<0.005	<1.0	<0.005	<0.01	0.003	0.36	<0.05	<0.05	0.21
	<0.05	0.09	<0.005	<0.05	<0.005	<1.0	<0.005	0.02	<0.005	0.34	<0.05	<0.05	0.23
I	<0.1	<0.1	<0.002	0.13	<0.005	0.1	<0.005	<0.01	<0.01	0.1	<0.005	-	0.02
	<0.05	0.01	<0.002	0.06	--	0.1	<0.005	0.01	<0.03	0.1	0.02	0.01	0.01
	<0.05	<0.05	<0.002	<0.02	<0.005	<1.0	<0.002	<0.01	<0.002	0.15	<0.05	<0.05	0.004
	<0.05	0.21	<0.002	<0.02	<0.005	<1.0	<0.002	<0.01	<0.002	0.17	<0.05	<0.05	0.02
	<0.05	0.15	<0.002	<0.02	<0.005	<1.0	<0.002	<0.01	0.003	0.15	<0.05	<0.05	0.02
	<0.05	0.05	<0.002	<0.02	<0.005	<1.0	<0.005	0.02	<0.005	0.15	<0.05	<0.05	<0.01
1805	<0.1	<0.1	0.006	0.15	<0.005	0.2	<0.005	<0.01	<0.01	0.2	0.11	-	0.06
1806	<0.1	0.15	0.029	1.4	<0.005	0.2	<0.005	<0.01	<0.01	0.2	12	-	2.2
1807	<0.1	0.1	0.013	0.67	<0.005	0.2	<0.005	<0.01	<0.01	0.2	1.9	-	1.8
1808	<0.05	0.38	<0.002	<0.02	<0.005	<1.0	<0.002	0.01	<0.002	0.21	0.13	<0.05	0.09
	<0.05	1.02	<0.002	<0.02	<0.005	<1.0	<0.002	<0.01	0.003	0.27	0.21	<0.05	0.13
	<0.05	0.10	<0.002	<0.02	<0.005	<1.0	<0.002	<0.01	0.005	0.23	0.11	<0.05	0.06
	<0.05	<0.05	<0.002	<0.02	<0.005	<1.0	<0.005	0.02	<0.005	0.20	<0.05	0.07	0.05
1809	<0.05	0.33	0.009	<0.02	<0.005	<1.0	<0.005	0.02	0.019	0.20	2.37	0.07	1.22
1810	<0.05	0.09	<0.002	<0.02	<0.005	<1.0	<0.005	0.02	0.010	0.34	<0.05	<0.05	1.22
1814	<0.05	0.11	<0.002	0.06	--	<1.0	<0.005	0.01	<0.03	0.1	0.4	0.03	0.05
	<0.05	<0.05	<0.002	<0.02	<0.005	<1.0	<0.002	<0.01	<0.002	0.13	5.70	<0.05	0.168
	<0.05	<0.05	<0.002	<0.02	<0.005	<1.0	<0.02	<0.01	0.003	0.14	11.0	<0.05	0.21
	<0.05	0.14	<0.002	<0.02	<0.005	<1.0	<0.002	<0.01	0.008	0.12	12.1	<0.05	0.20
	<0.05	<0.05	<0.002	<0.02	<0.005	<1.0	<0.005	0.02	0.009	0.09	10.0	0.08	0.21
1821	<0.05	0.80	<0.002	0.06	<0.005	<1.0	0.004	<0.01	<0.002	0.40	<0.05	<0.05	0.05
1822	<0.05	0.07	<0.002	<0.02	<0.005	<1.0	<0.005	<0.01	<0.002	<0.05	<0.05	<0.05	0.02

Notes: Concentration in mg/1 except Conductivity, in mhos/cm @ 25°C; Temperature, in °C; pH, in pH units; U, Pb-210, Po-210, Ra-226 and Th-230, in pCi/l

( ) Field Measurements

< Concentration less than value.

(a) Additional parameters for this sample are Silica (as S.0) . 10; Alkalinity (as $CaCO_3$) 188; Total Hardness (as $CaCO_3$)

(b) 219; Redox Potential = 196; Nitrite (as N) = *.05; Phogihos (as P) = '.02; and Total Iron . *1.0.

(c) Additional parameters for this sample are Phosphate = 0.04 and Nitrite = [11].01.

(d) Additional parameters for this sample are Phosphate = 0.025 and Nitrite = [11].01.

(e) Additional parameters for this sample are Silica (as 5.0,) = 9.9; Alkalinity (as $CaCO_3$) = 232.5; Total Hardness (as

(f) $CaCO_3$) 560; Redox Potential . 206; Nitrite (as N) = 0.13; Ptosphorus (as P) = *.03 and Total Iron 1.3.

(g) Additional parameters for this sample are Silica (as $S.0_2$) = 19.2; Alkalinity (as $CaCO_3$) = 703; Total Hardness (as $CoCO_3$) =

(h) 640; Redox Potential . 208; Nitrite (as N) *.05; Phosphorus (as P) = 0.02; and Total Iron 49.

(i) Additional parameters for this sample are Silica (as 5.0_2) . 8.6; Alkalinity (as $CoCO_3$) . 310; Total Hardness (as $CoCO_3$)

(j) 749; Redox Potential . 207; Nitrite (as N) = *.05; Phos4horus (as P) = '[1].02; and Total Iron . 1.0.

Table 2.7.3-17 Analytical Results - Conoco Baseline Monitoring Program

Well No.	Hg	Mo	Ni	Ag	Se	V	Zn	U	Pb-210	Po-210	Ra-226	Th-230
4IN-75W												
22-2	<0.001	<0.05	<0.01	<0.01	<0.002	<0.05	0.035					
8-3	<0.001	<0.02	<0.01		<0.002	<0.02	0.047	71 ±4	0±0.6	0.12 ±.03	0.60 ± 0.07	0 ± 0.4
	<0.001	<0.02	<0.01	<0.01	<0.002	<0.02	0.021					
	<0.001	<0.05	<0.01	<0.01	<0.002	<0.05	0.006					
	<0.001	<0.05	<0.01	<0.01	<0.002	<0.05	0.015					
4IN-75W												
893	<0.0005	<0.01	0.02	-	0.0023	<0.01	0.3	81	-	-	302 ± 20	-
	<0.001	<0.02	<0.01	-	<0.002	<0.02	0.014	58 ± 3	10 ± 0.5	1.5 ± 0.1	126 ± 6	0.3± 0.1
	<0.001	<0.02	<0.01	<0.01	-	<0.02	0.038					
	<0.001	<0.02	<0.01	<0.01	<0.002	<0.02	0.025					
	<0.001	<0.05	<0.01	<0.01	<0.002	<0.05	0.047					
	<0.001	<0.05	<0.01	<0.01	<0.002	<0.05	0.010					
885	0.00003	0.002	0.02	0.006	<0.005	<0.005	0.03	38			163 ± 20	
886	<0.00002	0.004	0.02	0.006	<0.005	<0.005	0.03	6.8			170 ± 15	
887	<0.00002	0.004	0.03	0.009	<0.005	<0.005	0.02	8.8			1.2 ± 1.2	
888	<0.00002	0.003	0.02	0.006	<0.005	<0.005	0.03	4.1			8.2 ± 3.0	
889	<0.001	<0.05	<0.05	<0.01	<0.002	<0.05	0.077					
	<0.001	<0.05	<0.01	<0.01	<0.002	<0.05	0.023					
I	<0.00002	<0.002	<0.01	<0.005	0.115	<0.005	0.02	338			69 ± 10	
	<0.0005	<0.01	0.01	-	0.36	<0.01	0.1	399			27.6± 1.7	
	<0.001	<0.02	<0.01	-	0.041	<0.02	0.038	294 ± 15	0±0.2	0.2 ± 0.03	8.0± 7.4	0 ± 0.1
	<0.001	<0.02	<0.01	<0.01	0.093	<0.02	0.051					
	<0.001	<0.05	<0.01	<0.01	0.103	<0.05	0.037					
	<0.001	<0.05	<0.01	<0.01	0.065	<0.05	0.008					
1805	<0.00002	0.002	0.02	<0.005	<0.005	<0.005	0.01	10			6.6 ± 2.3	
1806	<0.00002	<0.005	0.03	0.009	<0.005	<0.005	0.03	12			125 ± 17	
1807	<0.00002	<0.002	0.02	0.006	<0.005	<0.005	0.07	3.4			6.6 ± 2.3	
1808	<0.001	<0.02	<0.01	-	<0.002	<0.02	0.016	71 ± 4	0 ± 0.6	0.12 ± 0.03	0.60 ± 0.07	0 ± 0.4
	<0.001	<0.02	<0.01	<0.01	<0.002	<0.02	0.015					
	<0.001	<0.05	<0.01	<0.01	<0.002	<0.05	0.084					
	<0.001	<0.05	<0.01	-	<0.002	<0.05	<0.005					
1809	<0.001	<0.05	<0.01	<0.01	<0.002	<0.05	0.020					
1810	<0.001	<0.05	<0.01	<0.01	<0.002	<0.05	0.012					
1814	<0.0005	<0.01	0.02	-	0.012	<0.01	0.04	352	-	-	753 ± 45	
	<0.001	<0.02	<0.01	-	<0.002	<0.02	0.035	106 ± 5	0 ± 0.1	0.26 ± 0.05	5.1 ± 0.3	0 ± 0.1
	<0.001	<0.02	<0.01	<0.01	<0.002	<0.02	0.087					
	<0.001	<0.05	<0.01	<0.01	<0.002	<0.05	0.099					
	<0.001	<0.05	<0.01	-	<0.002	<0.05	0.017					
1821	<0.001	<0.02	<0.01	<0.01	<0.002	<0.02	0.018					
1822	<0.001	<0.02	<0.01	<0.01	<0.002	<0.02	<0.005					

Notes: Concentration in mg/1 except Conductivity, in mhos/cm @ 25°C; Temperature, in °C; pH, in pH units; U, Pb-210, Po-210, Ra-'226 and Th-230, in pCi/l

( ) Field Measurements

< Concentration less than value.

(a) Additional parameters for this sample are Silica (as S 0) . 10; Alkalinity (as $CaCO_3$) 188; Total Hardness (as $CaCO_3$)

(b) 219; Redox Potential = 196; Nitrite (as N) = *.05; Phogihos (as P) = '.02; and Total Iron . *1.0.

(c) Additional parameters *for* this sample are Phosphate = 0.04 and Nitrite = [11].01.

(d) Additional parameters for this sample are Phosphate = 0.025 and Nitrite = [11].01.

(e) Additional parameters for this sample are Silica (as 5.0.) = 9.9; Alkalinity (as $CaCO_3$) = 232.5; Total Hardness (as

(f) $CaCO_3$) 560; Redox Potential . 206; Nitrite (as N) = 0.13; Ptosphorus (as P) = *.03 and Total Iron 1.3.

(g) Additional parameters for this sample are Silica (as $S.0_2$) = 19.2; Alkalinity (as $CaCO_3$) = 703; Total Hardness (as $CoCO_3$) =

(h) 640; Redox Potential r. 208; Nitrite (as N) *.05; Phosphorus (as P) = 0.02; and Total Iron 49.

(i) Additional parameters for this sample are Silica (as 5.0_2) . 8.6; Alkalinity (as $CoCO_3$) . 310; Total Hardness (as $CoCO_3$)

(j) 749; Redox Potential . 207; Nitrite (as N) = *.05; Phos4horus (as P) = '[1].02; and Total Iron . 1.0.

Table 2.7.3.18
Analytical Results-Private Wells Sampled by Conoco 1978-1982

Well Location	Well No.	Date	TDS	Conductivity		Temp.	pH		Na	K	Ca	Mg	S04	Cl	CO3	HCO_3	NO3
41N-74W																	
04 NESE	A-1 17304	6/26/79[a]	492	820	(705)	(17)	7.53	(7.15)	39	9	101	15	187	6	0	234	1.7
		12/7/79[b]	606	870	(839)	(7)	7.73	(7.70)	46	9	107	17	215	8	0	278	1.86
04 NESE	A-2 17302	6/26/79[c]	655	1,100	(676)	(17)	7.91	(7.00)	13	9	156	10	179	25	0	312	24
		8/14/79	—	—	(647)	(15)	—	(7.45)	—	—	—	—	—	—	—	—	—
		12/7/79	670	1,130	(1,069)	(9)	7.61	(7.70)	9	9	169	27	160	41	0	307	36
17 SWSE	P'-6 9309	6/28/79	831	1,270	(1,083)	(16)	7.66	(7.30)	107	10	128	19	460	12	0	151	0.3
17 SWSE	P'-7 12240	6/28/79	509	940	(795)	(14)	7.58	(7.05)	48	8	100	20	212	16	0	239	0.22
4IN-75W																	
03 NESW	P'-9	6/20/79	1,024	1,389	(1,163)	(13)	7.32	(6.85)	45	13	201	48	550	7	0	312	1.16
		9/27/79	1,012	1,365	(1,258)	(12)	7.57	(6.95)	42	11	186	46	450	6	0	315	—
		3/26/80	964	1,300	(1,249)	(11)	7.61	(7.30)	42	13	197	47	516	6	0	327	0.44
04 NENW	P'-11	8/16/79	1,048	1,500	(1,308)	(12.5)	7.74	(7.45)	65	12	165	53	548	8	0	283	0.88
42N-74W																	
30 NWNW	P'-8 14683	6/28/79	2,339	2,770	(2,466)	(16)	6.95	(6.60)	16	11	512	116	1,270	4	0	366	0.34
42N-75W																	
33 SWSE	P'-10	6/20/79	1,566	1,923	(1,608)	(18)	7.71	(7.45)	37	5	375	58	910	12	0	359	0.39
33 SENW	T-1 12299	6/26/79	661	1,100	(924)	(15)	7.49	(7.35)	87	9	106	17	270	10	0	254	1.43
		9/18/79	690	1,060	(896)	(14)	7.69	(6.90)	85	9	106	20	284	7	0	249	3.05
		9/25/79	—	—	(920)	(19)	—	(7.05)	—	—	—	—	—	—	—	—	—
36 SENW	P'-36	10/10/79	604	921	(801)	(15)	7.72	(7.30)	15	6	109	43	154	8	0	390	1.07
		12/10/79	693	1,070	(1,042)	(9.5)	7.80	(7.70)	13	5	143	51	251	7	0	398	0.39

All concentrations are in mg/I except Conductivity, in uhos/cm @ 25°C; Temperature, in °C; pH in pH units, U; Pb-210, Po-210, 'Ra-226 and Th-230 in pCi/I

( ) Denotes field measurements.

Table 2.7.3.18
Analytical Results-Private Wells Sampled by Conoco 1978-1982

Well No.	Al	NH3 (as N)	As	Ba	Be	B	Cd	Cr	Cu	F	Fe	Pb	Mn
41N-74W													
A-1 17304	0.05	0.05	0.002	0.02	0.005	1.0	0.002	0.01	0.002	0.13	0.011	0.05	0.007
	0.05	0.05	0.002	0.02	0.005	1.0	0.002	0.01	0.007	0.19	0.050	0.05	0.020
A-2 17302	0.05	0.05	0.002	0.02	0.005	1.0	0.002	0.01	0.002	0.16	0.024	0.05	0.003
	—	—	—	—	—	—	—	—	—	—	—	—	—
	0.05	0.10	0.002	0.02	0.005	1.0	0.056	0.01	0.022	0.22	0.170	0.17	0.020
P'-6 9309	0.05	0.05	0.002	0.02	0.005	1.0	0.002	0.01	0.002	0.08	0.592	0.05	0.072
P'-7 12240	0.05	0.05	0.002	0.02	0.005	1.0	0.002	0.01	0.002	0.14	0.424	0.05	0.078
41N-75W													
P'-9	0.05	0.05	0.002	0.02	0.005	1.0	0.002	0.01	0.002	0.13	0.069	0.05	0.088
	0.05	—	0.002	0.02	0.005	1.0	0.002	0.01	0.002	0.05	0.050	0.05	0.070
	0.05	0.10	0.002	0.02	0.005	1.0	0.005	0.01	0.010	0.12	0.100	0.07	0.080
P'-11	0.05	0.06	0.002	0.02	0.005	1.0	0.008	0.01	0.009	0.14	0.020	0.05	0.020
42N-74W													
P'-8 14683	0.05	0.09	0.002	0.02	0.005	1.0	0.002	0.01	0.002	0.31	5.842	0.05	0.856
42N-75W													
P'-10	0.05	0.05	0.002	0.02	0.005	1.0	0.013	0.01	0.002	0.36	0.139	0.05	0.030
T-I 12299	0.05	0.05	0.002	0.02	0.005	1.0	0.002	0.01	0.002	0.17	0.012	0.05	0.016
	0.05	0.05	0.002	0.02	0.005	1.0	0.002	0.01	0.005	0.23	0.120	0.05	0.060
	—	—	—	—	—	—	—	—	—	—	—	—	—
P'-36	0.05	2.81	0.002	0.02	0.005	1.0	0.002	0.01	0.002	0.27	5.600	0.05	0.080
	—	0.14	—	—	—	—	—	—	—	—	—	—	—

All concentrations are in mg/l except Conductivity, in uhos/cm @ 25°C; Temperature, in °C; pH in pH units, U; Pb-210, Po-210, 'Ra-226 and Th-230 in pCi/I

( ) Denotes field measurements.

Table 2.7.3.18
Analytical Results-Private Wells Sampled by Conoco 1978-1982

Well No.	Hg	Mo	Ni	Se	V	Zn	U	Pb-210	Po-210	Ra-226	Th-230
41N-74W											
A-1 17304	0.001	<0.02	<0.01	<0.002	<0.02	1.80	37+2	0+ 0.3	0.03 + 0.1	0.15+ 0.05	0 + 0.1
	0.001	<0.05	<0.01	<0.002	<0.02	1.83	—	—	—	—	—
A-2 17302	0.001	<0.02	<0.01	<0.002	<0.02	0.054	20± 1	0.3± 0.1	0 ± 0.04	0.15 + 0.04	0.4 + 0.1
	—	—	—	—	—	—	—	—	—	—	—
	0.001	<0.05	<0.01	<0.002	<0.05	0.135	—	—	—	—	—
P'-6 9309	0.001	<0.02	<0.01	<0.002	<0.02	0.054	0 ± 2	0+1.0	0+ 0.02	0.35 + 0.05	0.2 + 0.1
P'-7 12240	0.001	<0.02	<0.01	<0.002	<0.02	0.041	6 + I	0 + 0.05	0 + 0.06	0.74 + 0.07	0.3 + 0.1
4IN-75W											
P'-9	0.001	<0.02	<0.01	0.007	<0.02	0.024	32 + 2	1.6 + 0.2	0.4 +.05	2.0 + 0.1	0.2 + 0.1
	0.001	<0.02	<0.01	<0.002	<0.02	0.006	—	—	—	—	—
	0.001	<0.05	<0.01	<0.002	<0.05	0.007	—	—	—	—	—
P'-11	0.001	<0.02	<0.01	<0.002	<0.02	0.05	—	—	—	—	—
42N-74W											
P'-8 14683	0.001	<0.02	<0.01	<0.002	<0.02	0.945	7 ± 1	0 ± 0.5	0.08 ± 0.02	0.75 +0 .07	0 + 0.1
42N-75W											
P'-10	0.001	<0.02	<0.01	<0.002	<0.02	0.078	17+ I	1.9+ 0.7	0.10 + 0.02	0 + 0.08	0 + 0.1
T-1 12299	0.001	<0.02	<0.01	<0.002	<0.02	0.113	44±2	0 ± 0.4	0.02 ± 0.01	0.41 + 0.06	0.3+ 0.1
	0.001	<0.02	<0.01	<0.002	<0.02	0.07	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—
P'-36	0.001	<0.02	<0.01	<0.002	<0.02	0.72	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—

All concentrations are in mg/I except Conductivity, in uhos/cm @ 25°C; Temperature, in °C; pH in pH units, U; Pb-210, Po-210, 'Ra-226 and Th-230 in pCi/I

( ) Denotes field measurements.

Table 2.7.3-19 Analytical Results EMC Baseline Monitoring Program

			Major Cations and Anions											General Chemistry		
			Na	K	Ca	Mg	Cl	HCO3	CO3	SO4	NO3+NO2 as N	F	Si	TDS @180 F	Conduct.	pH.
Well ID	Completion Zone	Sample Date	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(umhos/cm)	(s.u.)
MR-UMW-2	68	5/11/2007	50	17	73	6	2	214	3	168	0.4	0.2	8.9	448	674	8.31
MR-UMW-2	68	6/18/2007	50	17	32	1	2	<1	4	133	<0.1	0.3	12.2	266	552	11
MR-UMW-4	68	5/9/2007	76	12	66	8	2	231	<1	212	0.8	0.3	10.7	528	794	7.81
MR-UMW-4	68	6/15/2007	72	10	56	8	5	246	<1	161	0.6	0.3	11.9	448	710	7.96
MR-UMW-4	68	6/19/2007	81	11	41	8	<1	210	<1	144	0.6	0.3	17.3	400	633	8.09
MR-MW-2	70	3/21/2007	18	9	133	30	3	297	<1	226	0.2	0.2	13.2	582	860	7.61
MR-MW-2	70	6/19/2007	24	10	177	38	5	290	<1	450	<0.1	0.2	13.8	906	1220	7.41
MR-MW-3	70	3/22/2007	37	9	109	27	2	265	<1	245	<0.1	0.2	12.8	540	844	7.59
MR-MW-3	70	6/20/2007	37	14	103	26	4	261	<1	249	<0.1	0.2	12.9	562	878	7.73
MR-MW-4	70	4/30/2007	41	15	175	48	3	256	<1	568	1.5	0.1	9.9	968	1335	7.6
MR-MW-4	70	6/13/2007	37	14	194	56	4	256	<1	600	<0.1	0.1	12.1	1090	1450	7.63
MR-MW-6	70	4/26/2007	18	9	91	18	1	244	<1	164	0.8	0.2	11.6	452	705	7.5
MR-MW-6	70	6/12/2007	19	9	94	20	<1	244	<1	170	0.1	0.2	12.4	440	715	7.70
MR-MW-7	70	4/26/2007	26	7	73	15	1	159	<1	187	0.5	0.4	14.2	420	659	7.7
MR-MW-7	70	6/12/2007	24	7	72	16	<1	213	<1	121	0.3	0.2	13.2	352	590	7.76
MR-MW-9	70	5/1/2007	55	11	100	21	2	239	<1	283	0.2	0.2	11.6	650	970	8.1
MR-MW-9	70	6/12/2007	62	12	104	25	1	237	<1	312	0.2	0.2	12.4	638	975	8.10
MR-MW-11	70	5/4/2007	54	10	160	38	2	305	<1.0	460	0.1	0.2	13.2	880	1223	7.13
MR-MW-11	70	6/20/2007	53	11	163	37	2	305	<1	458	<0.1	0.2	14.3	890	1250	7.36
MR-PW-1	70	2/16/2007	22	9	156	37	2	293	<1	363	<0.1	0.1	13.6	754	1066	7.45
MR-PW-1	70	6/18/2007	89	24	38	<1	3	<1	8	169	0.3	0.3	7.6	420	975	11.5
MR-885	70	5/2/2007	40	9	155	34	3	300	<1.0	370	0.3	0.2	12.2	842	1203	7.17
MR-885	70	6/15/2007	37	8	154	35	3	300	<1	407	<0.1	0.2	11.6	802	1150	7.55
MR-1808	68-70	5/3/2007	60.0	7.6	104	19.5	3	179	<1	316	0.1	0.3	6.6	602	976	8.1
MR-1808	68-70	6/19/2007	64	7	97	19	3	178	<1	322	<0.1	0.3	9.4	638	916	7.38
MR-8-3	68-70	5/2/2007	15	12	399	149	<1	370	<1.0	1410	0.2	0.1	12.8	2270	2740	6.93
MR-8-3	68-70	6/13/2007	9	12	408	176	2	359	<1	1430	<0.1	<0.1	12.8	2380	2660	7.13
MR-OMW-1	72	4/27/2007	26	21	88	14	3	191	2	191	<0.2	0.2	11.8	454	713	8.85
MR-OMW-1	72	6/18/2007	30	26	53	9	5	84	4	189	<0.1	0.2	11.7	348	566	8.99
MR-OMW-2	72	5/10/2007	55	10	129	21	4	45	7	466	0.2	0.2	3.4	818	847	9.2
MR-OMW-2	72	6/12/2007	72	12	172	34	6	74	<1	667	0.2	0.2	4.0	1050	1400	8.43
MR-OMW-3	72	4/26/2007	32	15	58	11	2	229	<1	108	0.4	0.2	11.0	348	571	7.97
MR-OMW-3	72	6/14/2007	19	15	59	18	4	239	<1	79	<0.1	0.2	14.2	314	527	8.12
MR-OMW-4	72	4/30/2007	19	16	229	84	4	327	<1	743	3.7	0.2	13.4	1320	1656	7.3
MR-OMW-4	72	6/13/2007	19	20	250	79	3	310	<1	722	<0.1	<0.1	12.8	1350	1700	7.30
Stockwell #1	70?	4/27/2007	53	8	149	33	2	273	<1	404	0.4	0.2	11.0	806	1179	7.5
Stockwell #1	70?	6/13/2007	59	9	149	34	2	273	<1	410	0.2	0.2	11.3	822	1180	7.51
Stockwell #2	68?	4/27/2007	22	10	286	78	8	346	<1	776	0.2	0.2	13.8	1420	1748	7.1
Stockwell #2	68?	6/13/2007	24	10	268	80	9	344	<1	769	<0.1	0.1	14.1	1450	1800	7.34
Stockwell #3	70?	4/27/2007	29	11	456	166	6	388	<1	1500	0.3	0.2	9.2	2470	2980	7.25
Stockwell #3	70?	6/13/2007	30	11	455	168	6	403	<1	1530	<0.1	0.2	9.0	2550	2860	7.32
Stockwell #4	72?	5/9/2007	3	3	64	24	6	232	<1	75	2.5	0.4	9.1	340	524	7.5
Stockwell #4	72?	6/19/2007	4	3	69	25	5	234	<1	79	2.2	0.6	10.1	358	544	7.42

< - indicates sample was below reporting limit
tot. - total dis.-dissolved sus.- suspended

Table 2.7.3-19 Analytical Results EMC Baseline Monitoring Program

			Trace Metals																
Well ID	Completion Zone	Sample Date	Al (mg/l)	NH4 as N (mg/l)	As (mg/l)	Ba (mg/l)	B (mg/l)	Cd (mg/l)	Cr (mg/l)	Cu (mg/l)	Fe (mg/l)	Pb (mg/l)	Mn (mg/l)	Hg (mg/l)	Mo (mg/l)	Ni (mg/l)	Se (mg/l)	V (mg/l)	Zn (mg/l)
MR-UMW-2	68	5/11/2007	<0.1	0.10	0.006	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	<0.01	<0.001	<0.1	<0.05	0.402	<0.1	<0.01
MR-UMW-2	68	6/18/2007	<0.1	0.21	0.003	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	<0.01	<0.001	<0.1	<0.05	0.37	<0.1	0.01
MR-UMW-4	68	5/9/2007	<0.1	0.05	0.003	<0.1	<0.1	<0.005	<0.05	0.03	0.31	0.018	0.03	<0.001	<0.1	<0.05	0.052	<0.1	0.01
MR-UMW-4	68	6/15/2007	<0.1	<0.05	0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.02	<0.001	<0.1	<0.05	0.069	<0.1	0.01
MR-UMW-4	68	6/19/2007	<0.1	<0.05	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	0.002	0.01	<0.001	<0.1	<0.05	0.060	<0.1	0.01
MR-MW-2	70	3/21/2007	<0.1	<0.05	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.03	<0.001	<0.1	<0.05	0.527	<0.1	0.01
MR-MW-2	70	6/19/2007	<0.1	<0.05	0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.05	<0.001	<0.1	<0.05	0.004	<0.1	<0.01
MR-MW-3	70	3/22/2007	<0.1	<0.05	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.02	<0.001	<0.1	<0.05	<0.001	<0.1	<0.01
MR-MW-3	70	6/20/2007	<0.1	<0.05	0.002	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	<0.01	<0.001	<0.1	<0.05	<0.001	<0.1	<0.01
MR-MW-4	70	4/30/2007	<0.1	0.13	0.002	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.03	<0.001	<0.1	<0.05	<0.001	<0.1	<0.01
MR-MW-4	70	6/13/2007	<0.1	0.11	0.002	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.04	<0.001	<0.1	<0.05	<0.001	<0.1	<0.01
MR-MW-6	70	4/26/2007	<0.1	0.06	0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.03	<0.001	<0.1	<0.05	0.006	<0.1	<0.01
MR-MW-6	70	6/12/2007	<0.1	<1.0	0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.02	<0.001	<0.1	<0.05	0.004	<0.1	<0.01
MR-MW-7	70	4/26/2007	<0.1	<0.05	0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.02	<0.001	<0.1	<0.05	0.045	<0.1	<0.01
MR-MW-7	70	6/12/2007	<0.1	<0.05	0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.02	<0.001	<0.1	<0.05	0.119	<0.1	<0.01
MR-MW-9	70	5/1/2007	<0.1	0.20	0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.02	<0.001	<0.1	<0.05	<0.001	<0.1	<0.01
MR-MW-9	70	6/12/2007	<0.1	0.20	0.002	<0.1	<0.1	<0.005	<0.05	<0.01	0.04	<0.001	0.02	<0.001	<0.1	<0.05	0.001	<0.1	<0.01
MR-MW-11	70	5/4/2007	<0.1	0.10	0.001	<0.1	<0.1	<0.005	<0.05	<0.01	0.47	<0.001	0.03	<0.001	<0.1	<0.05	<0.001	<0.1	<0.01
MR-MW-11	70	6/20/2007	<0.1	0.05	0.002	<0.1	<0.1	<0.005	<0.05	<0.01	0.6	<0.0001	0.04	<0.001	<0.1	<0.05	0.001	<0.1	<0.01
MR-PW-1	70	2/16/2007	<0.1	<0.05	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	0.85	<0.001	0.04	<0.001	<0.1	<0.05	<0.001	<0.1	0.02
MR-PW-1	70	6/18/2007	<0.1	2.01	0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	0.011	<0.01	<0.001	<0.1	<0.05	0.023	<0.1	<0.01
MR-885	70	5/2/2007	<0.1	<0.05	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	0.15	<0.001	0.05	<0.001	<0.1	<0.05	<0.001	<0.1	<0.01
MR-885	70	6/15/2007	<0.1	<0.05	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.06	<0.001	<0.1	<0.05	0.002	<0.1	<0.01
MR-1808	68-70	5/3/2007	<0.1	0.06	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.03	<0.001	<0.1	<0.05	0.003	<0.1	<0.01
MR-1808	68-70	6/19/2007	<0.1	<0.05	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.06	<0.001	<0.1	<0.05	0.001	<0.1	<0.01
MR-8-3	68-70	5/2/2007	<0.1	1.62	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	3.34	<0.001	0.53	<0.001	<0.1	<0.05	0.001	<0.1	<0.01
MR-8-3	68-70	6/13/2007	<0.1	0.24	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	1.08	<0.001	0.52	<0.001	<0.1	<0.05	0.001	<0.1	<0.01
MR-OMW-1	72	4/27/2007	<0.1	0.53	0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	<0.01	<0.001	<0.1	<0.05	<0.001	<0.1	<0.01
MR-OMW-1	72	6/18/2007	<0.1	0.59	0.002	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	<0.01	<0.001	<0.1	<0.05	<0.001	<0.1	<0.01
MR-OMW-2	72	5/10/2007	<0.1	0.33	0.002	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	<0.01	<0.001	<0.1	<0.05	0.003	<0.1	<0.01
MR-OMW-2	72	6/12/2007	<0.1	<1.0	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.02	<0.001	<0.1	<0.05	0.003	<0.1	<0.01
MR-OMW-3	72	4/26/2007	<0.1	0.23	0.003	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	<0.01	<0.001	<0.1	<0.05	<0.001	<0.1	<0.01
MR-OMW-3	72	6/14/2007	<0.1	0.22	0.002	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	<0.01	<0.001	<0.1	<0.05	<0.001	<0.1	<0.01
MR-OMW-4	72	4/30/2007	<0.1	0.16	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	0.41	<0.001	0.22	<0.001	<0.1	<0.05	<0.001	<0.1	<0.01
MR-OMW-4	72	6/13/2007	<0.1	0.16	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.17	<0.001	<0.1	<0.05	<0.001	<0.1	0.01
Stockwell #1	70?	4/27/2007	<0.1	<0.05	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.06	<0.001	<0.1	<0.05	0.010	<0.1	<0.01
Stockwell #1	70?	6/13/2007	<0.1	<0.05	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.05	<0.001	<0.1	<0.05	0.012	<0.1	<0.01
Stockwell #2	68?	4/27/2007	<0.1	0.05	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	0.03	<0.001	0.24	<0.001	<0.1	<0.05	<0.001	<0.1	<0.01
Stockwell #2	68?	6/13/2007	<0.1	0.05	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	0.58	<0.001	0.25	<0.001	<0.1	<0.05	<0.001	<0.1	<0.01
Stockwell #3	70?	4/27/2007	<0.1	0.10	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	4.86	<0.001	0.46	<0.001	<0.1	<0.05	<0.001	<0.1	<0.01
Stockwell #3	70?	6/13/2007	<0.1	0.14	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	0.24	<0.001	0.46	<0.001	<0.1	<0.05	0.001	<0.1	<0.01
Stockwell #4	72?	5/9/2007	<0.1	<0.05	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	0.13	0.004	0.04	<0.001	<0.1	<0.05	0.002	<0.1	<0.01
Stockwell #4	72?	6/19/2007	<0.1	<0.05	<0.001	<0.1	<0.1	<0.005	<0.05	<0.01	<0.03	<0.001	0.06	<0.001	<0.1	<0.05	0.002	<0.1	0.02

< - indicates sample was below reporting limit
tot. - total dis.-dissolved sus.- suspended

Table 2.7.3-19 Analytical Results EMC Baseline Monitoring Program

					Radionuclides												
Well ID	Completion Zone	Sample Date	Fe (tot.) (mg/l)	Mn (tot.) (mg/l)	G Alpha (pCi/l)	G Beta (pCi/l)	Pb-210 (dis.) (pCi/l)	Po-210 (dis.) (pCi/l)	Ra-226 (dis.) (pCi/l)	Ra-228 (dis.) (pCi/l)	Th-230 (dis.) (pCi/l)	U (dis.) (mg/l)	Pb-210 (sus.) (pCi/l)	Po-210 (sus.) (pCi/l)	Ra-226 (sus.) (pCi/l)	Th-230 (sus.) (pCi/l)	U (sus.) (mg/l)
MR-UMW-2	68	5/11/2007	<0.03	<0.01	83.3	36.8	<1.0	1.8	1.0	<1.0	<0.2	0.112	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-UMW-2	68	6/18/2007	<0.03	<0.01			<1.0	<1.0	0.6	<1.0	<0.2	0.0188	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-UMW-4	68	5/9/2007	0.04	0.02	53.4	18.4	<1.0	<1.0	1.0	3.3	<0.2	0.0685	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-UMW-4	68	6/15/2007	0.12	0.02			<1.0	<1.0	0.6	<1.0	<0.2	0.0747	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-UMW-4	68	6/19/2007	0.10	0.01			<1.0	<1.0	0.9	<1.0	<0.2	0.0688	<1.0	<1.0	<0.2	0.2	<0.0003
MR-MW-2	70	3/21/2007	<0.03	0.03	1050	327	31	51	138	<1.0	<0.2	0.739	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-MW-2	70	6/19/2007	0.05	0.05			11	2.8	220	3.8	<0.2	0.884	<1.0	3.3	<0.2	<0.2	<0.0003
MR-MW-3	70	3/22/2007	0.13	0.02	370	162	69	34	280	<1.0	<0.2	0.0837	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-MW-3	70	6/20/2007	0.14	0.02			21	7.3	242	5.9	0.6	0.144	41	15	8.1	<0.2	<0.0003
MR-MW-4	70	4/30/2007	2.04	0.03	201	53.8	<1.0	<1.0	45.7	1.7	<0.2	0.130	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-MW-4	70	6/13/2007	0.56	0.04			<1.0	<1.0	42.0	<1.0	<0.2	0.0895	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-MW-6	70	4/26/2007	<0.03	0.03	17.0	13.6	<1.0	<1.0	1.3	<1.0	<0.2	0.0152	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-MW-6	70	6/12/2007	<0.03	0.03			<1.0	<1.0	0.7	<1.0	<0.2	0.0147	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-MW-7	70	4/26/2007	<0.03	0.02	21.2	11.4	<1.0	1.6	1.1	<1.0	<0.2	0.0323	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-MW-7	70	6/12/2007	<0.03	0.02			6.1	<1.0	1.4	<1.0	<0.2	0.0377	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-MW-9	70	5/1/2007	<0.03	0.02	47.1	24.6	<1.0	2.0	2.5	<1.0	<0.2	0.0582	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-MW-9	70	6/12/2007	0.03	0.01			<1.0	<1.0	7.6	<1.0	<0.2	0.0547	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-MW-11	70	5/4/2007	0.68	0.03	156	47.3	<1.0	<1.0	26	3.5	0.9	0.103	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-MW-11	70	6/20/2007	0.89	0.04			<1.0	<1.0	22	<1.0	<0.2	0.104	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-PW-1	70	2/16/2007	1.08	0.04	627	78.9	10	<1.0	82.6	2.1	<0.2	0.188					
MR-PW-1	70	6/18/2007	0.05	<0.01			<1.0	<1.0	<0.2	<1.0	<0.2	0.0053	<1.0	<1.0	0.6	<0.2	<0.0003
MR-885	70	5/2/2007	0.23	0.06	293	147	41	31	309	1.8	<0.2	0.0763	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-885	70	6/15/2007	0.26	0.05			12	12	276	4.3	<0.2	0.110	270	290	9.3	1	<0.003
MR-1808	68-70	5/3/2007	<0.03	0.03	30.9	12.8	<1.0	<1.0	9.1	<1.0	0.4	0.0012	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-1808	68-70	6/19/2007	0.28	0.08			<1.0	<1.0	4.9	<1.0	<0.2	0.0005	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-8-3	68-70	5/2/2007	3.86	0.60	3.6	12.9	<1.0	<1.0	0.8	3.0	<0.2	0.0020	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-8-3	68-70	6/13/2007	3.57	0.53			<1.0	<1.0	1.2	<1.0	<0.2	0.0016	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-OMW-1	72	4/27/2007	<0.03	<0.01	3.5	20.4	<1.0	<1.0	0.8	2.8	<0.2	0.0014	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-OMW-1	72	6/18/2007	<0.03	<0.01			<1.0	<1.0	<0.2	<1.0	<0.2	0.0008	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-OMW-2	72	5/10/2007	0.07	<0.01	9.6	8.6	<1.0	<1.0	1.1	2.5	1.0	0.0027	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-OMW-2	72	6/12/2007	0.10	0.02			<1.0	<1.0	1.2	<1.0	<0.2	0.0026	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-OMW-3	72	4/26/2007	0.05	<0.01	1.8	13.6	<1.0	<1.0	1.1	9.5	<0.2	0.0014	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-OMW-3	72	6/14/2007	<0.03				<1.0	<1.0	0.6	<1	<0.2	0.0024		<1.0	<0.2	<0.2	<0.0003
MR-OMW-4	72	4/30/2007	1.35	0.22	3.5	14.4	<1.0	<1.0	1.8	2.0	<0.2	0.0008	<1.0	<1.0	<0.2	<0.2	<0.0003
MR-OMW-4	72	6/13/2007	1.03	0.18			<1.0	<1.0	2.0	<1.0	<0.2	0.0010	<1.0	<1.0	<0.2	<0.2	<0.0003
Stockwell #1	70?	4/27/2007	<0.03	0.06	68.2	24.0	<1.0	<1.0	0.8	1.6	<0.2	0.0508	<1.0	<1.0	<0.2	<0.2	<0.0003
Stockwell #1	70?	6/13/2007	0.14	0.06			<1.0	<1.0	0.6	<1.0	<0.2	0.0446	<1.0	<1.0	<0.2	<0.2	<0.0003
Stockwell #2	68?	4/27/2007	3.27	0.25	2.0	7.9	<1.0	<1.0	0.9	3.9	<0.2	0.0008	<1.0	<1.0	<0.2	<0.2	<0.0003
Stockwell #2	68?	6/13/2007	3.70	0.25			<1.0	<1.0	0.8	<1.0	<0.2	0.0004	<1.0	<1.0	<0.2	<0.2	<0.0003
Stockwell #3	70?	4/27/2007	9.10	0.46	24.3	16.5	<1.0	<1.0	3.3	3.5	<0.2	0.0077	<1.0	<1.0	<0.2	<0.2	<0.0003
Stockwell #3	70?	6/13/2007	10.0	0.49			<1.0	<1.0	2.8	1.8	<0.2	0.0066	<1.0	<1.0	<0.2	<0.2	<0.0003
Stockwell #4	72?	5/9/2007	2.64	0.19	5.9	5.5	<1.0	<1.0	<0.2	<1.0	0.9	0.0071	<1.0	<1.0	<0.2	<0.2	<0.0003
Stockwell #4	72?	6/19/2007	0.37	0.07			<1.0	<1.0	<0.2	<1.0	<0.2	0.0069	<1.0	<1.0	<0.2	<0.2	<0.0003

< - indicates sample was below reporting limit
tot. - total dis.-dissolved sus.- suspended

Table 2.7.3-20a. Comparison of Historic and Current Baseline Monitoring Analytical Results From Monitor Wells, Moore Ranch Project Area

Well ID	Sample Date	Na (mg/l)	K (mg/l)	Ca (mg/l)	Mg (mg/l)	Cl (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	SO4 (mg/l)	NO3+ NO2 (mg/l)	F (mg/l)
885	4/12/78	31.5	8.1	208.0	33.5	3.3	281.0	ND	426.0	0.6	0.1
	5/2/2007	40.0	9.0	155.0	34.0	3.0	300.0	ND	370.0	0.3	0.2
	6/15/2007	37.0	8.0	154.0	35.0	3.0	300.0	ND	407.0	ND	0.2
	Average	36.2	8.4	172.3	34.2	3.1	293.7	ND	401.0	0.5	0.2
	Max	40.0	9.0	208.0	35.0	3.3	300.0	ND	426.0	0.6	0.2
	Min	31.5	8.0	154.0	33.5	3.0	281.0	ND	370.0	ND	0.1
1808	6/26/79	69.0	9.0	93.0	19.0	10.0	161.0	ND	303.0	0.3	0.2
	9/27/79	69.0	9.0	86.0	17.0	8.0	171.0	ND	300.0	0.4	0.3
	12/15/79	63.0	8.0	84.0	17.0	6.0	159.0	ND	280.0	0.4	0.2
	4/2/80	77.0	10.0	115.0	24.0	8.0	173.0	ND	405.0	0.2	0.2
	5/3/2007	60.0	7.6	104.0	19.5	3.0	179.0	ND	316.0	0.1	0.3
	6/19/2007	64.0	7.0	97.0	19.0	3.0	178.0	ND	322.0	ND	0.3
	Average	67.0	8.4	96.5	19.3	6.3	170.2	ND	321.0	0.3	0.3
	Max	77.0	10.0	115.0	24.0	10.0	179.0	ND	405.0	0.4	0.3
	Min	60.0	7.0	84.0	17.0	3.0	159.0	ND	280.0	ND	0.2
8-3	6/28/79	8.0	12.0	354.0	58.0	6.0	361.0	ND	980.0	0.6	ND
	9/27/79	9.0	12.0	278.0	96.0	6.0	371.0	ND	750.0	0.5	0.1
	12/6/79	8.0	13.0	245.0	120.0	6.0	361.0	ND	936.0	0.2	0.1
	4/9/80	10.0	14.0	251.0	115.0	12.0	256.0	ND	860.0	0.2	0.1
	5/2/2007	15.0	12.0	399.0	149.0	ND	370.0	ND	1410.0	0.2	0.1
	6/13/2007	9.0	12.0	408.0	176.0	2.0	359.0	ND	1430.0	ND	ND
	Average	9.8	12.5	322.5	119.0	6.4	346.3	ND	1061.0	0.3	0.1
	Max	15.0	14.0	408.0	176.0	12.0	371.0	ND	1430.0	0.6	0.1
	Min	8.0	12.0	245.0	58.0	2.0	256.0	ND	750.0	ND	ND

Historic Monitoring
Current Monitoring

Table 2.7.3-20a. Comparison of Historic and Current Baseline Monitoring Analytical Results From Monitor Wells, Moore Ranch Project Area

Well ID	Sample Date	Al (mg/l)	NH4 (mg/l)	As (mg/l)	Ba (mg/l)	B (mg/l)	Cd (mg/l)	Cr (mg/l)	Cu (mg/l)	Fe (mg/l)	Mn (mg/l)
885	4/12/78	ND	ND	0.004	0.19	0.2	ND	ND	0.66		0.23
	5/2/2007	ND	ND	ND	ND	ND	ND	ND	ND	0.15	0.05
	6/15/2007	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.06
	Average	ND	ND	0.004	0.19	0.2	ND	ND	0.66	0.15	0.11
	Max	ND	ND	0.004	0.19	0.2	ND	ND	0.66	0.15	0.23
	Min	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.05
1808	6/26/79	ND	0.38	ND	ND	ND	ND	ND	0.13	ND	0.09
	9/27/79	ND	1.02	ND	ND	ND	ND	0.003	0.21	ND	0.13
	12/15/79	ND	0.10	ND	ND	ND	ND	0.005	0.11	ND	0.06
	4/2/80	ND	ND	ND	ND	ND	ND	ND	ND	0.07	0.05
	5/3/2007	ND	0.06	ND	ND	ND	ND	ND	ND	ND	0.03
	6/19/2007	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.06
	Average	ND	0.5	ND	ND	ND	ND	0.004	0.15	0.07	0.07
	Max	ND	1.02	ND	ND	ND	ND	0.005	0.21	0.07	0.13
	Min	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03
8-3	6/28/79	ND	0.11	ND	ND	ND	ND	ND	1.96	ND	0.33
	9/27/79	ND	0.81	ND	ND	ND	ND	0.004	2.4	ND	0.33
	12/6/79	ND	0.47	ND	ND	ND	ND	0.002	2.65	0.07	0.33
	4/9/80	ND	0.11	ND	ND	ND	0.006	0.010	3.75	0.08	0.32
	5/2/2007	ND	1.62	ND	ND	ND	ND	ND	ND	3.34	0.53
	6/13/2007	ND	0.24	ND	ND	ND	ND	ND	ND	1.08	0.52
	Average	ND	0.56	ND	ND	ND	0.006	0.005	2.69	1.14	0.39
	Max	ND	1.62	ND	ND	ND	0.006	0.010	3.75	3.34	0.53
	Min	ND	0.11	ND	ND	ND	ND	ND	ND	ND	0.32

Conoco Baseline Monitoring Program
EMC Baseine Monitoring Program

Table 2.7.3-20a. Comparison of Historic and Current Baseline Monitoring Analytical Results From Monitor Wells, Moore Ranch Project Area

Well ID	Sample Date	Hg (mg/l)	Mo (mg/l)	Ni (mg/l)	Se (mg/l)	V (mg/l)	Zn (mg/l)	TDS@ 180F (mg/l)	Conductivity (umhos/cm)	pH s.u.	Ra-226 (pCi/L)	U (mg/l)
885	4/12/78	0.00003	0.002	0.02	ND	ND	0.03	836	1113	7.53	163	0.056
	5/2/2007	ND	ND	ND	ND	ND	ND	842	1203	7.17	309	0.0763
	6/15/2007	ND	ND	ND	0.002	ND	ND	802	1150	7.55	276	0.110
	Average	0.00003	0.002	0.02	0.002	ND	0.03	827	1155	7.42	292.50	0.08
	Max	0.00003	0.002	0.02	0.002	ND	0.03	842	1203	7.55	309.00	0.11
	Min	ND	ND	ND	ND	ND	ND	802	1113	7.17	276.00	0.06
1808	6/26/79	ND	ND	ND	ND	ND	0.02	573	800	7.20	0.6	-
	9/27/79	ND	ND	ND	ND	ND	0.02	570	789	6.45	-	-
	12/15/79	ND	ND	ND	ND	ND	0.08	608	813	7.65	-	-
	4/2/80	ND	ND	ND	ND	ND	ND	684	986	8.20	-	-
	5/3/2007	ND	ND	ND	0.003	ND	ND	602	976	8.10	9.1	0.0012
	6/19/2007	ND	ND	ND	0.001	ND	ND	638	916	7.38	4.9	0.0005
	Average	ND	ND	ND	0.002	ND	0.04	613	880	7.50	4.87	0.00
	Max	ND	ND	ND	0.003	ND	0.08	684	986	8.20	9.10	0.00
	Min	ND	ND	ND	ND	ND	ND	570	789	6.45	0.60	0.00
8-3	6/28/79	ND	ND	ND	ND	ND	0.05	1460	1610	6.85	0.6	71
	9/27/79	ND	ND	ND	ND	ND	0.02	1426	1660	6.50	-	-
	12/6/79	ND	ND	ND	ND	ND	0.01	1566	1680	7.75	-	-
	4/9/80	ND	ND	ND	ND	ND	-	1398	1750	7.10	-	-
	5/2/2007	ND	ND	ND	ND	ND	ND	2270	2740	6.93	0.8	0.002
	6/13/2007	ND	ND	ND	ND	ND	ND	2380	2660	7.13	1.2	0.0016
	Average	ND	ND	ND	ND	ND	0.02	1750	2017	7.04	0.87	23.67
	Max	ND	ND	ND	ND	ND	0.05	2380	2740	7.75	1.20	71.00
	Min	ND	ND	ND	ND	ND	ND	1398	1610	6.50	0.60	0.00

Conoco Baseline Monitoring Program
EMC Baseine Monitoring Program

Table 2.7.3-20b. Comparison of Historic and Current Baseline Monitoring Analytical Results From Private Wells, Moore Ranch Project Area

Well ID	Sample Date	Al (mg/l)	NH4 (mg/l)	As (mg/l)	Ba (mg/l)	B (mg/l)	Cd (mg/l)	Cr (mg/l)	Cu (mg/l)	F (mg/l)	Fe (mg/l)	Mn (mg/l)	Hg (mg/l)		Ra-226 (pCi/L)	U (mg/l)
Stockwell #1 (T-1)	6/26/1979	ND	ND	ND	ND	ND	ND	ND	ND	0.17	0.01	0.02	ND		0.41	0.000
	9/18/1979	ND	ND	ND	ND	ND	ND	ND	0.005	0.23	0.12	0.06	ND		0.20	0.031
	4/27/2007	ND	ND	ND	ND	ND	ND	ND	ND	0.20	ND	0.06	ND		0.80	0.051
	6/13/2007	ND	ND	ND	ND	ND	ND	ND	ND	0.20	ND	0.05	ND		0.60	0.045
	Average	ND	ND	ND	ND	ND	ND	ND	0.005	0.20	0.07	0.05	ND		0.50	0.032
	Max	ND	ND	ND	ND	ND	ND	ND	0.005	0.23	0.12	0.06	ND		0.80	0.051
	Min	ND	ND	ND	ND	ND	ND	ND	ND	0.17	ND	0.02	ND		0.20	0.000
Stockwell #2 (P'-11)	8/16/1979	ND	0.06	ND	ND	ND	0.008	ND	0.009	0.14	0.02	0.02	ND			
	4/27/2007	ND	0.05	ND	ND	ND	ND	ND	ND	0.20	0.03	0.24	ND		0.90	0.001
	6/13/2007	ND	0.05	ND	ND	ND	ND	ND	ND	0.10	0.58	0.25	ND		0.80	0.000
	Average	ND	0.05	ND	ND	ND	0.008	ND	0.009	0.15	0.21	0.17	ND		0.85	0.001
	Max	ND	0.06	ND	ND	ND	0.008	ND	0.009	0.20	0.58	0.25	ND		0.90	0.001
	Min	ND	0.05	ND	ND	ND	0.008	ND	0.009	0.10	0.02	0.02	ND		0.80	0.000
Stockwell #3 (P'-9)	6/20/1979	ND	ND	ND	ND	ND	ND	ND	ND	0.13	0.07	0.09	ND		2.00	0.047
	9/27/1979	ND		ND	ND	ND	ND	ND	ND	ND	ND	0.07	ND		2.10	0.033
	3/26/1980	ND	0.10	ND	ND	ND	ND	ND	0.010	0.12	0.07	0.08	ND			
	4/27/2007	ND	0.10	ND	ND	ND	ND	ND	ND	0.20	4.86	0.46	ND		3.30	0.008
	6/13/2007	ND	0.14	ND	ND	ND	ND	ND	ND	0.20	0.24	0.46	ND		2.80	0.007
	Average	ND	0.11	ND	ND	ND	ND	ND	0.01	0.16	1.31	0.23	ND		2.55	0.024
	Max	ND	0.14	ND	ND	ND	ND	ND	0.01	0.20	4.86	0.46	ND		3.30	0.047
	Min	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.07	ND		2.00	0.007

Note-U values from Conoco data were reported in pCi/L and converted to mg/l by a conversion factor of 677 pCi = 1 mg

Conoco Baseline Monitoring Program

EMC Baseine Monitoring Program

Table 2.7.3-21 Comparison of Moore Ranch Monitoring Results to Water Quality Standards

	MAJOR CATIONS/ANIONS											
	Na	**K**	**Ca**	**Mg**	**Cl**	**HC03**	**CO3**	**SO4**	**NH4**	**NO2+NO3 (N)**	**F**	**SiO2**
WYO Class I Standard	NA	NA	NA	NA	250	NA	NA	250	0.5	NA[3]	4	NA
EPA MCL	NA	NA	NA	NA	NA[1]	NA	NA	NA[2]	NA	NA[3]	4	NA
All Aquifers (68, 70 and 72)												
Number of Samples	31*	31*	31*	31*	31*	31*	31*	31*	31*	31*	31*	31*
Average	37.8	12.2	115.4	28.4	2.7	227.8	1.5	315.2	0.2	0.4	0.2	11.8
Max	81	26	250	84	6	327	7	743	1	3.7	0.4	17.7
Min	11	4.5	32	1	1	45	0.5	79	0.05	0.025	0.05	3.4
No. Samples> WDEQ Class I	NA	NA	NA	NA	0	NA	NA	**12**	**5**		0	NA
No. Samples> MCL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	NA
68 Sand Monitor Wells												
Number of Samples	5	5	5	5	5	5	5	5	5	5	5	5
Average	65.8	13.4	53.6	6.2	2.4	225.3	2.0	163.6	0.1	0.5	0.3	12.3
Max	81	17	73	8	5	246	4	212	0.21	0.8	0.3	17.7
Min	50	10	32	1	1	210	1	133	0.05	0.1	0.2	8.9
No. Samples> WDEQ Class I	NA	NA	NA	NA	0	NA	NA	0	**0**	0	0	NA
No. Samples> MCL	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	NA
70 Sand Monitor Wells												
Number of Samples	17*	17*	17*	17*	17*	17*	17*	17*	17*	17*	17*	17*
Average	33.6	9.6	122.9	31.0	2.2	248.1	0.9	312.9	0.1	0.3	0.2	12.4
Max	62.0	15.0	194.0	56.0	5.0	305.0	1.0	600.0	0.5	1.5	0.4	14.3
Min	11.0	4.5	72.0	15.0	1.0	147.0	0.5	121.0	0.1	0.0	0.1	9.9
No. Samples> WDEQ Class I	NA	NA	NA	NA	0	NA	NA	**8**	0	0	0	NA
No. Samples> MCL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	NA
72 Sand Monitor Wells												
Number of Samples	8	8	8	8	8	8	8	8	8	8	8	8
Average	34.0	16.9	129.8	33.8	3.9	187.4	2.3	395.6	0.4	0.6	0.2	10.3
Max	72.0	26.0	250.0	84.0	6.0	327.0	7.0	743.0	1.0	3.7	0.2	14.2
Min	19.0	10.0	53.0	9.0	2.0	45.0	1.0	79.0	0.2	0.1	0.1	3.4
No. Samples> WDEQ Class I	NA	NA	NA	NA	0	NA	NA	**4**	**3**		0.0	NA
No. Samples> MCL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0	NA

Table 2.7.3-21 Comparison of Moore Ranch Monitoring Results to Water Quality Standards

	TRACE METALS															
	Al	As	Ba	B	Cd	Cr	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	V	Zn
WYO Class I Standard	NA	0.050	2	0.75	0.005	0.1	1	0.3	0.015	0.05	0.002	NA	NA	0.05	NA	5
EPA MCL	NA[4]	0.010	2	NA	0.005	0.1	NA[5]	NA[6]	0.015	NA[7]	0.002	NA	NA	0.05	NA	NA[8]
All Aquifers (68, 70 and 72)																
Number of Samples	31*	31*	31*	31*	31*	31*	31*	31*	31*	31*	31*	31*	31*	31*	31*	31*
Average	0.10	0.002	0.10	0.10	0.005	0.05	0.03	0.12	0.002	0.04	0.00	0.10	0.05	0.05	0.10	0.01
Max	0.1	0.0045	0.1	0.1	0.005	0.05	0.1	0.85	0.018	0.22	0.001	0.1	0.05	0.527	0.1	0.02
Min	0.1	0.001	0.1	0.1	0.005	0.05	0.01	0.03	0.001	0.01	0.001	0.1	0.05	0.001	0.1	0.01
No. Samples> WDEQ Class I	NA	0	0	0	0	0	0	**3**	**1**	**3**	0	NA	NA	**7**	NA	0
No. Samples> MCL	0	0	0	NA	0	0	0	NA	0	NA	0	NA	NA	**7**	NA	0
68 Sand Monitor Wells																
Number of Samples	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Average	0.100	0.002	0.100	0.100	0.005	0.050	0.014	0.086	0.005	0.016	0.001	0.100	0.050	0.191	0.100	0.010
Max	0.100	0.005	0.100	0.100	0.005	0.050	0.030	0.310	0.018	0.030	0.001	0.100	0.050	0.402	0.100	0.010
Min	0.100	0.001	0.100	0.100	0.005	0.050	0.010	0.030	0.001	0.010	0.001	0.100	0.050	0.052	0.100	0.010
No. Samples> WDEQ Class I	NA	0	0	0	0	0	0	**1**	**1**	0	0	NA	NA	**5**	NA	0
No. Samples> MCL	0	0	0	NA	0	0	0	NA	0	NA	0	NA	NA	**5**	NA	0
70 Sand Monitor Wells																
Number of Samples	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Average	0.100	0.001	0.100	0.100	0.005	0.050	0.010	0.138	0.002	0.030	0.001	0.100	0.050	0.041	0.100	0.011
Max	0.1	0.002	0.1	0.1	0.005	0.05	0.01	0.85	0.011	0.06	0.001	0.1	0.05	0.527	0.1	0.02
Min	0.1	0.001	0.1	0.1	0.005	0.05	0.01	0.03	0.001	0.01	0.001	0.1	0.05	0.001	0.1	0.01
No. Samples> WDEQ Class I	NA	0	0	0	0	0	0	**1**	0	**1**	0	NA	NA	**2**	NA	0
No. Samples> MCL	0	0	0	NA	0	0	0	NA	0	NA	0	NA	NA	**2**	NA	0
72 Sand Monitor Wells																
Number of Samples	8	8	8	8	8	8	8	8	8	8	8	8				
Average	0.100	0.002	0.100	0.100	0.005	0.050	0.100	0.078	0.001	0.058	0.001	0.100	0.050	0.002	0.100	0.010
Max	0.1	0.003	0.1	0.1	0.005	0.05	0.1	0.41	0.001	0.22	0.001	0.1	0.05	0.003	0.1	0.01
Min	0.1	0.001	0.1	0.1	0.005	0.05	0.1	0.03	0.001	0.01	0.001	0.1	0.05	0.001	0.1	0.01
No. Samples> WDEQ Class I	NA	0	0	0	0	0	0	**1**	0	**2**	0	NA	NA	0	NA	0
No. Samples> MCL	0	0	0	NA	0	0	0	NA	0	NA	0	NA	NA	0	NA	0

Table 2.7.3-21 Comparison of Moore Ranch Monitoring Results to Water Quality Standards

	General Water Quality Parameters			Radionuclides												
	TDS	Conduct.	pH (units)	Gross Alpha	Gross Beta	Pb-210	Po-210	Ra-226	Ra-228	Th-230	U	Pb-210 (sus.)	Po-210 (sus.)	Ra-226 (sus.)	Th-230 (sus.)	U (sus.)
WYO Class I Standard	500	NA	6.5-8.5	15*	NA	NA	NA	5[a]	5[a]	NA	NA	NA	NA	NA	NA	NA
EPA MCL	NA[9]	NA	NA[10]	NA*	NA	NA	NA	5[a]	5[a]	NA	0.03	NA	NA	NA	NA	NA
All Aquifers (68, 70 and 72)																
Number of Samples	31*	31*	31*	15	15	31*	31*	31*	31*	31*	31*	31*	31*	31*	31*	31*
Average	647.1	924.2	7.68	195.83	65.19	7.44	5.48	57.01	2.01	0.26	0.1052	11.30	11.18	0.79	0.23	0.0003
Max	1350.0	1700.0	11.00	1050.00	327.00	69.00	51.00	309.00	9.50	1.00	0.8840	270.00	290.00	9.30	1.00	0.0003
Min	266.0	527.0	3.73	1.80	8.60	1.00	1.00	0.20	1.00	0.20	0.0008	1.00	1.00	0.20	0.20	0.0003
No. Samples> WDEQ Class I	**16**	NA	**4**	11	NA	NA	NA	**15**	**2**	NA	NA	NA	NA	NA	NA	NA
No. Samples> MCL	NA	NA	NA	NA	NA	NA	NA	**15**	**2**	NA	**19**	NA	NA	NA	NA	NA
68 Sand Monitor Wells																
Number of Samples	5	5	5	2	2	5	5	5	5	5	5	5	5	5	5	5
Average	408.4	672.6	8.634	68.35	27.60	1.00	1.16	0.82	1.46	0.20	0.069	1	1	0.2	0.2	0.0003
Max	528	794	11	83.30	36.80	1.00	1.80	1.00	3.30	0.20	0.112	1	1	0.2	0.2	0.0003
Min	266	552	7.81	53.40	18.40	1.00	1.00	0.60	1.00	0.20	0.019	1	1	0.2	0.2	0.0003
No. Samples> WDEQ Class I	**1**	NA	**1**	**2**	NA	NA	NA	0	0	NA	NA	NA	NA	NA	NA	NA
No. Samples> MCL	NA	NA	NA	NA	NA	NA	NA	0	0	NA	**4**	NA	NA	NA	NA	NA
70 Sand Monitor Wells																
Number of Samples	17*	17*	17*	9	9	17*	17*	17*	17*	17*	17*	17*	17*	17*	17*	17*
Average	653.8	949.6	7.17	309.14	96.18	11.73	8.43	94.34	1.89	0.26	0.1594	18.17	17.96	1.19	0.24	0.0003
Max	1090.0	1450.0	8.10	1050.00	327.00	69.00	51.00	309.00	5.90	0.90	0.8840	270.00	290.00	9.30	1.00	0.0003
Min	352.0	533.0	3.73	8.50	6.80	1.00	1.00	0.20	1.00	0.20	0.0053	1.00	1.00	0.20	0.20	0.0003
No. Samples> WDEQ Class I	**11**	NA	0	9	NA	NA	NA	12	1	NA	NA	NA	NA	NA	NA	NA
No. Samples> MCL	NA	NA	NA	NA	NA	NA	NA	12	1	NA	**15**	NA	NA	NA	NA	NA
72 Sand Monitor Wells																
Number of Samples	8	8	8	4	4	8	8	8	8	8	8	8	8	8	8	8
Average	750.3	997.5	8.27	4.60	14.25	1.00	1.00	1.10	2.60	0.30	0.0016	1.00	1.00	0.20	0.20	0.0003
Max	1350.0	1700.0	9.20	9.60	20.40	1.00	1.00	2.00	9.50	1.00	0.0027	1.00	1.00	0.20	0.20	0.0003
Min	314.0	527.0	7.30	1.80	8.60	1.00	1.00	0.20	1.00	0.20	0.0008	1.00	1.00	0.20	0.20	0.0003
No. Samples> WDEQ Class I	**4**	NA	**3**	0	NA	NA	NA	0	1	NA	NA	NA	NA	NA	NA	NA
No. Samples> MCL	NA	NA	NA	NA	NA	NA	NA	0	1	NA	0	NA	NA	NA	NA	NA

Table 2.7.3-21 Comparison of Moore Ranch Monitoring Results to Water Quality Standards

*One sample from PW-1 was not consistent with sample results from other wells and one other sample collected from PW-1. The results from that sample analysis were not included in the totals
Samples that were below detection were valued at the detection limit for purposes of calculating the average.
All samples were reported as non-detect for Al, Ba, B, Cd, Cr, Cu, Hg, Mo, Ni and V.

1 - EPA Secondary Drinking Water Standard for chloride is 250.0 mg/l
2 - EPA Secondary Drinking Water Standard for sulfate is 250 mg/l
3 - WDEQ Class I and EPA MCL standards for Nitrate (as N) and Nitrite (as N) are 10 mg/l and 1 mg/l respectively. Only two samples exceeded the lower 1.0 mg/l standard.
4 - EPA Secondary Drinking Water Standard for aluminum is 0.05 to 2.0 mg/l
5 - EPA Secondary Drinking Water Standard for copper is1.0 mg/l
6 - EPA Secondary Drinking Water Standard for iron is 0.3 mg/l
7 - EPA Secondary Drinking Water Standard for manganese is 0.05 mg/l
8 - EPA Secondary Drinking Water Standard for zinc is 5.0 mg/l
9 - EPA Secondary Drinking Water Standard for TDS is 500 mg/l
10 - EPA Secondary Drinking Water Standard for pH is 6.5 to 8.5 s.u.
[a] - Radium standards are for combined Ra226 +228. Only one sample exceeded the standard based soley on the Radium 228 concentration.
All other samples that exceeded the combined standard did so based solely on the Ra226 concentration.

R. 75 W.

R. 74 W.

T. 42 N.

T. 41 N.

Negro Joe Draw

Sand Rock Draw

Moore Ranch Permit Boundary

MRSW-1

MRSW-2

MRSW-3

MRSW-4

MRSW-5

MRSW-6

MRSW-7

MRSW-8

MRSW-9

MRSW-10

MRSW-11

Upper Wash #2

Wash #3

Wash #1

Simmons Draw

Lower Wash #2

Upper Wash #1

Pine Tree Draw

Lower Wash #1

Ninemile Creek

South Fork Ninemile Creek

Ninemile Cr.

LEGEND

- SURFACE WATER SAMPLING SITES

0' 1 MILE 2 MILES

FIGURE 2.7.1-1

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REVISIONS		
NO.	DATE	BY
1	06/06/02	JT

MOORE RANCH URANIUM PROJECT

DRAINAGE BASINS

PORTIONS OF T. 41 & 42 N., R. 74 & 75 W.

ERA	SYSTEM, SERIES AND OTHER SUBDIVISIONS		STRATIGRAPHIC UNIT	HYDROGEOLOGIC UNIT
Cenozoic	Quaternary		Alluvium	Not Included As An Aquifer System
	Tertiary: Pliocene, Miocene	Upper	(Absent in Powder River Basin)	
	Tertiary: Oligocene	Lower	White River Formation	
	Tertiary: Eocene, Paleocene	Lower	Wasatch Formation Fort Union Formation	Lower Tertiary Aquifers
Mesozoic	Cretaceous	Upper	Lance Formation Fox Hills Sandstone Lewis Shale Mesaverde Formation* Steele Shale Cody Shale Frontier Formation* Mowry Shale Muddy Sandstone* Thermopolis Shale	Upper Cretaceous Aquifers Confining Unit
	Cretaceous	Lower	Inyan Kara Group: Fall River Formation, Lakota Formation	Lower Cretaceous Aquifers
	Jurassic		Morrison Formation Sundance Formation* Gyspsum Spring Formation	Confining Unit
	Triassic		Chugwater Formation	
Paleozoic	Permian		Goose Egg Formation	
	Pennsylvanian		Tensleep Sandstone / Minnelusa Formation Amsden Formation	Upper Paleozoic Aquifers
	Mississippian		Madison Formation	

* Can be a local source of groundwater where permeable

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Figure 2.7.2-1
Regional Hydrostratigraphic Section
Northern Great Plains Aquifer System,
Powder River Basin (after USGS

Project: 312-7	Date: September 2007	
Figure 2.7.2-1.mxd	By: JLM	Checked: KC

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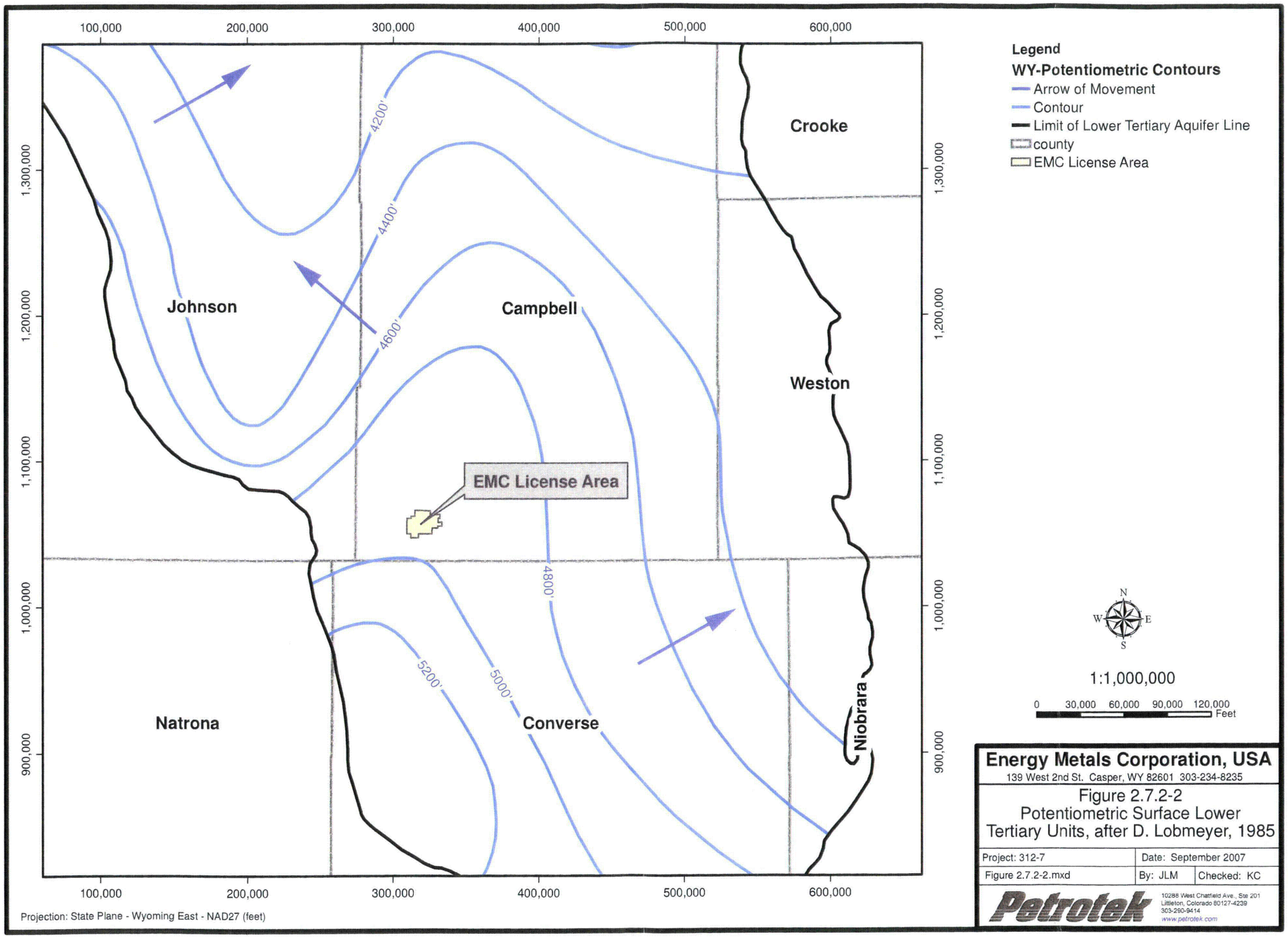

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Figure 2.7.2-2
Potentiometric Surface Lower Tertiary Units, after D. Lobmeyer, 1985

Project: 312-7	Date: September 2007	
Figure 2.7.2-2.mxd	By: JLM	Checked: KC

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License Area

28 27 26 25 30

33 34 35 36 31

4 3 2 1

9 10 11 12

T42N
T41N

R75W
R74W

MW-11
MW-3
OMW-3
UMW-3
MW-10
MW-9
Wellfield 1
MW-8
UMW-1
PW-1
MW-1
OMW-1
1805
UMW-2
1807
OMW-2
MW-2
Wellfield 2
MW-6
MW-4
OMW-4
UMW-4
Wellfield 3
MW-7
MW-5

STATE HIGHWAY 387

5400 5300

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Figure 2.7.2-3

License Area and Pump Test

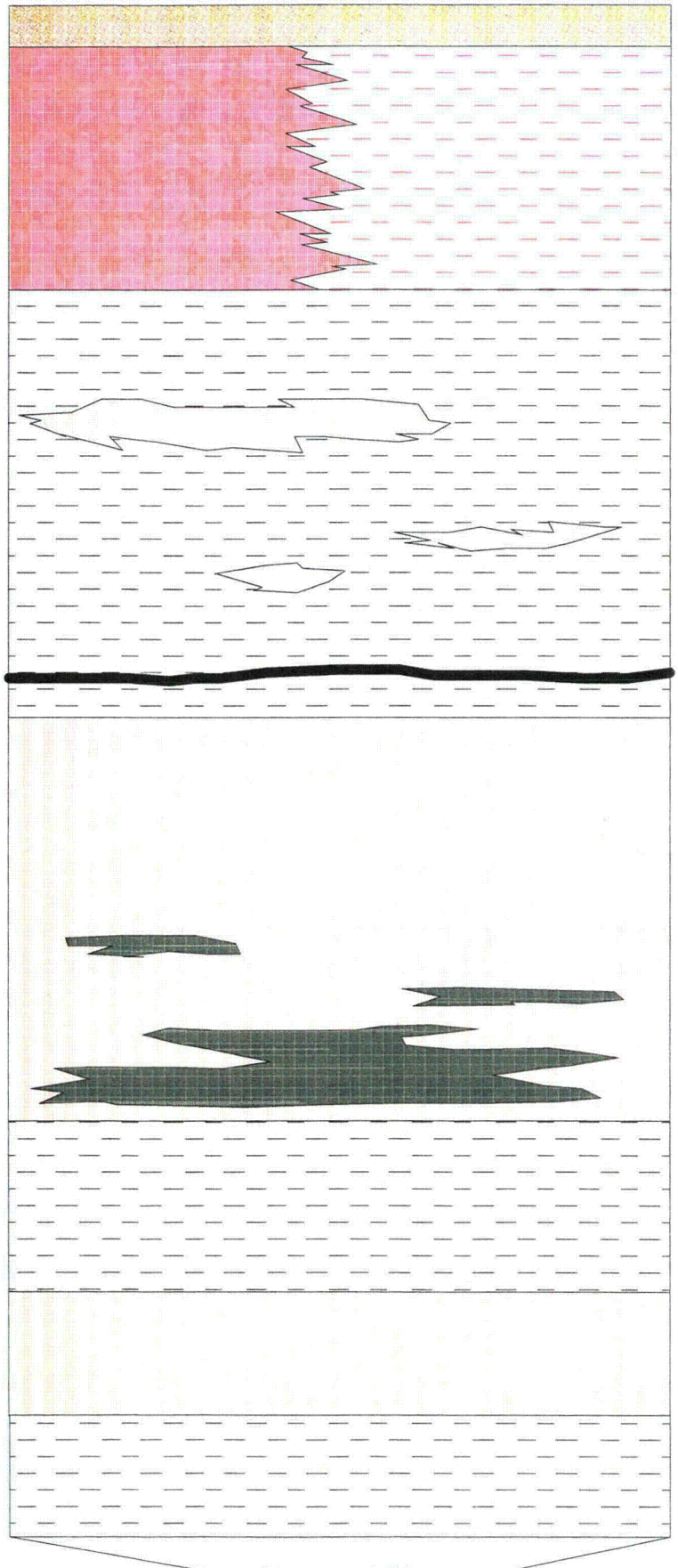
Monitoring Well Locations

WELL SYMBOLS
- 70 Sand
- 72 Sand
- 68 Sand
- 70 Sand Conoco
- 68 Sand Conoco

By: KRS Checked: HPD/EL

0 2,500

FEET



Alluvium - 0 to 10 ft thick
only in drainages and low lying areas

Altered Sandstone and Clays
20 to 70 ft thick
More Clay to South and East

Clays and Silts
with discontinous Sand Lenses
15 to 150 ft thick
Unit Thickens to the North
(Overlying Confining Zone)

"E" Coal-(lignite), < 5 ft thick

70 Sand - 50 to 120 ft thick
Uranium Ore Zone in Lower Portion
Mineralization typically 5 to 25 ft thick

Clays and Silts
3 to 50 ft thick

68 Sand
30 - 70 ft thick

Clays and Silts
(Underlying Confining Zone)

Not to Scale

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Figure 2.7.2-4
Moore Ranch Generalized Stratigraphic Section

Project: 312-4-3	Date: September 2007
Dwg: EMC TR Fig 2.7.2-4.SRF	By: KRS Checked: HPD

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N

MW-11

5,172.2

STATE HIGHWAY 387

5400

MW-3

5177

5,177.7

5179

5179

5,181.8

Wellfield 1

MW-10

5181

MW-9

5,181.9

5183

5400

5185

34

35

MW-6

5185

5,183.4

5,186.7

5187

5,187.7

MW-1

PW-1

MW-8

5,187.9

5,188.1

MW-2

5189

5189

Wellfield 2

5191

5193

Wellfield 3

MW-5

5,193.3

MW-4

5195

5,193.1

MW-7

5300

5,196.5

T42N - R75W

T41N - R75W

5300

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Figure 2.7.2-5

Moore Ranch Regional Aquifer Test

04/14/07 Potentiometric Surface 70 Sand

REMARKS
Contour Interval = 2 Feet [amsl]

By: KRS Checked: HPD/EL

0 1,000

FEET

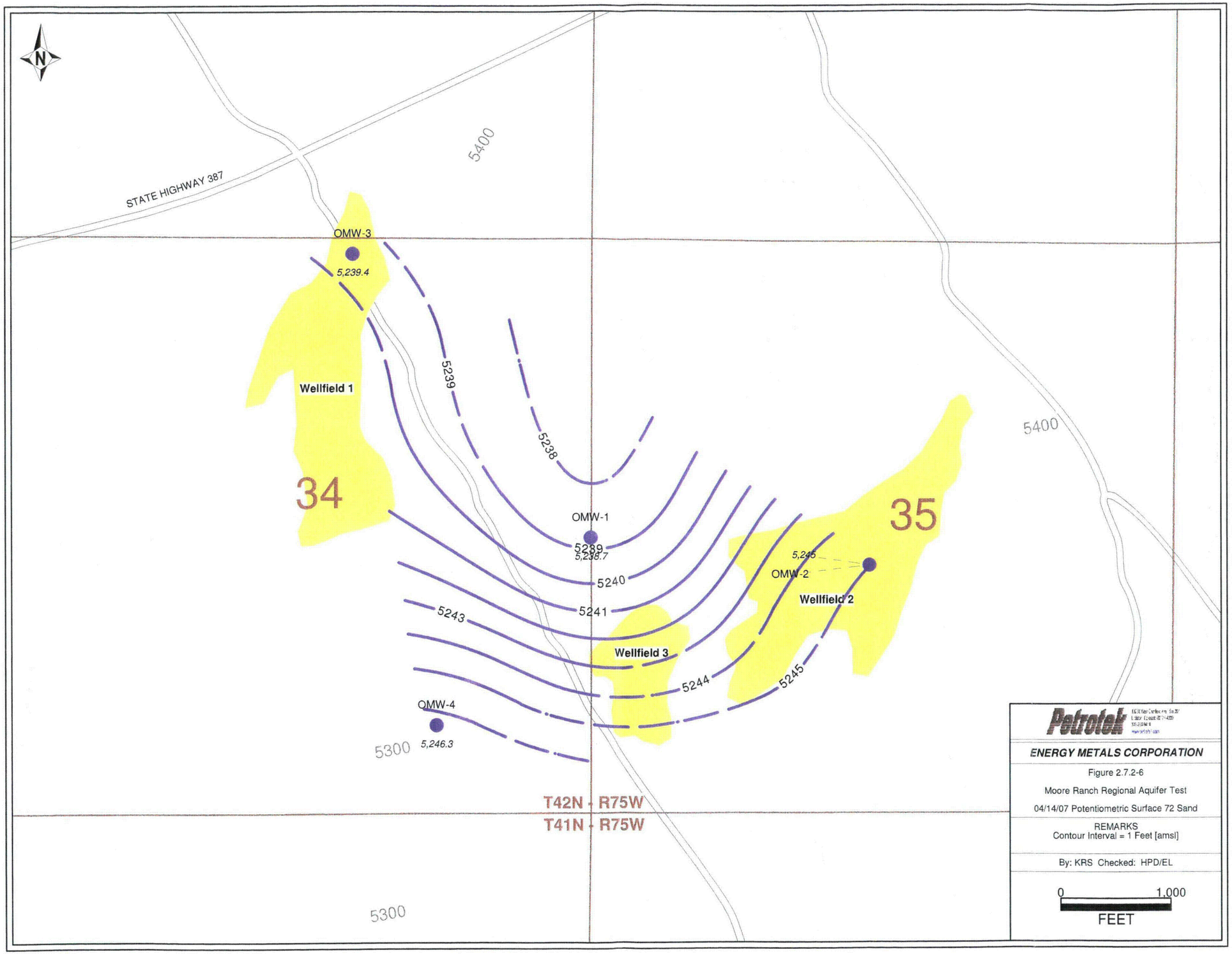
N
STATE HIGHWAY 387
5400
OMW-3
5,239.4
Wellfield 1
5239
5238
34
OMW-1
5239
5,238.7
5240
5241
5243
Wellfield 3
5244
5245
35
5,245
OMW-2
Wellfield 2
5400
OMW-4
5,246.3
5300
T42N - R75W
T41N - R75W
5300
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Figure 2.7.2-6
Moore Ranch Regional Aquifer Test
04/14/07 Potentiometric Surface 72 Sand
REMARKS
Contour Interval = 1 Feet [amsl]
By: KRS Checked: HPD/EL
0
1,000
FEET

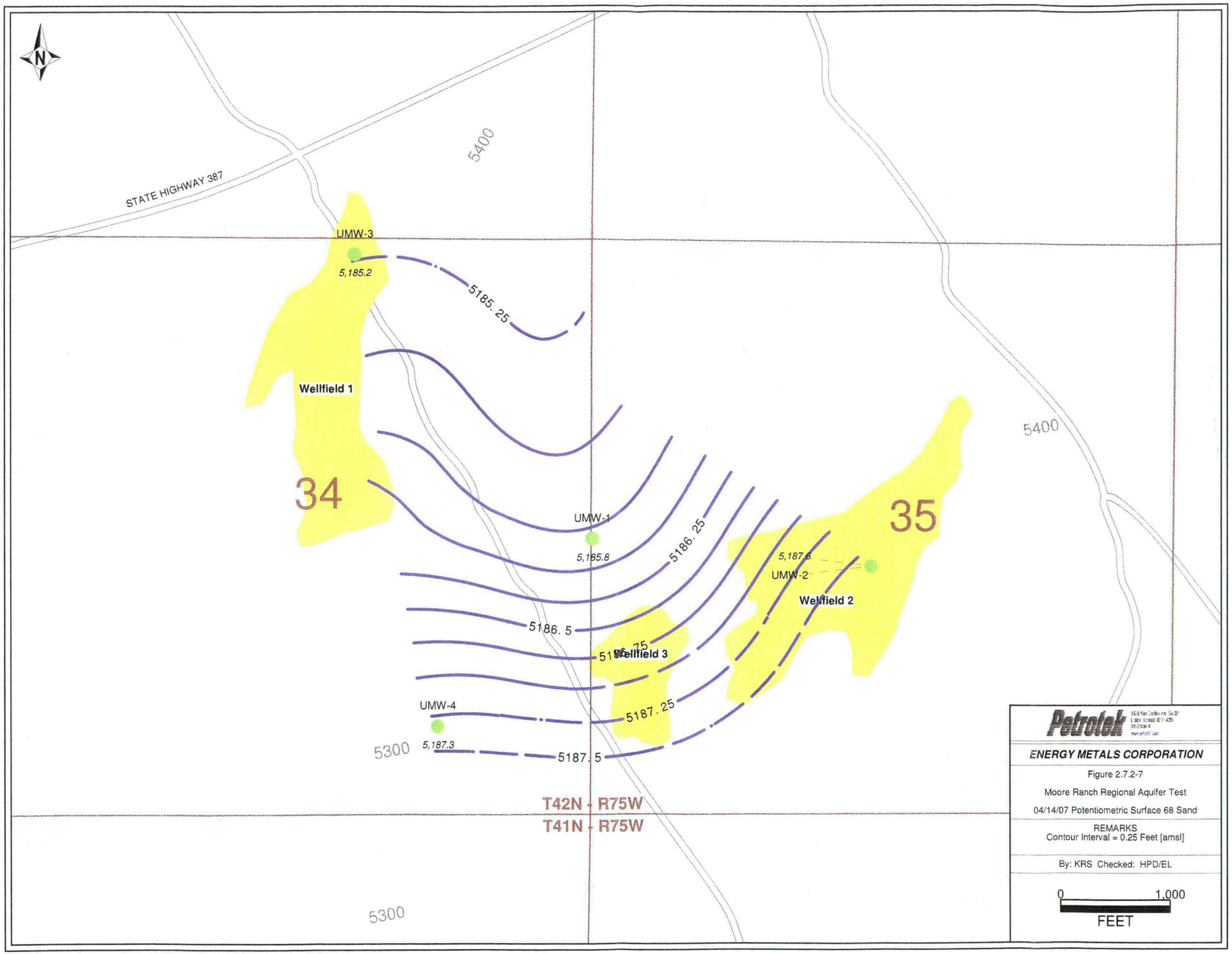
N
STATE HIGHWAY 387
5400
UMW-3
5,185.2
5185.25
Wellfield 1
34
UMW-1
5,185.8
5186.25
5186.5
5186.75
Wellfield 3
35
5,187.6
UMW-2
Wellfield 2
5400
UMW-4
5,187.3
5187.25
5187.5
5300
T42N - R75W
T41N - R75W
5300
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Figure 2.7.2-7
Moore Ranch Regional Aquifer Test
04/14/07 Potentiometric Surface 68 Sand
REMARKS
Contour Interval = 0.25 Feet [amsl]
By: KRS Checked: HPD/EL
0
1,000
FEET

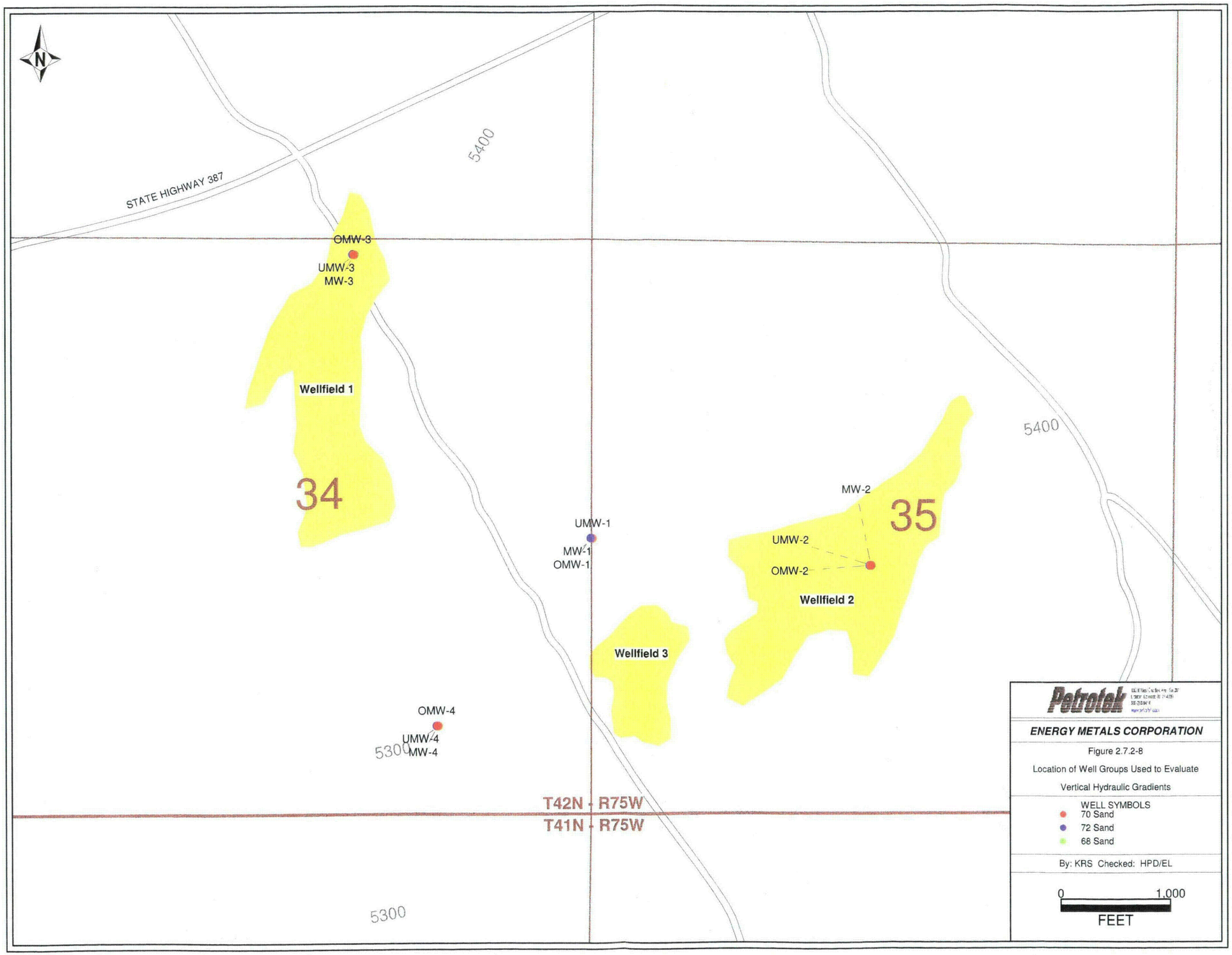
N
STATE HIGHWAY 387
5400
OMW-3
UMW-3
MW-3
Wellfield 1
34
5400
MW-2
35
UMW-1
MW-1
OMW-1
UMW-2
OMW-2
Wellfield 2
Wellfield 3
OMW-4
UMW-4
MW-4
5300
T42N - R75W
T41N - R75W
5300
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Figure 2.7.2-8
Location of Well Groups Used to Evaluate
Vertical Hydraulic Gradients
WELL SYMBOLS
70 Sand
72 Sand
68 Sand
By: KRS Checked: HPD/EL
0
1,000
FEET

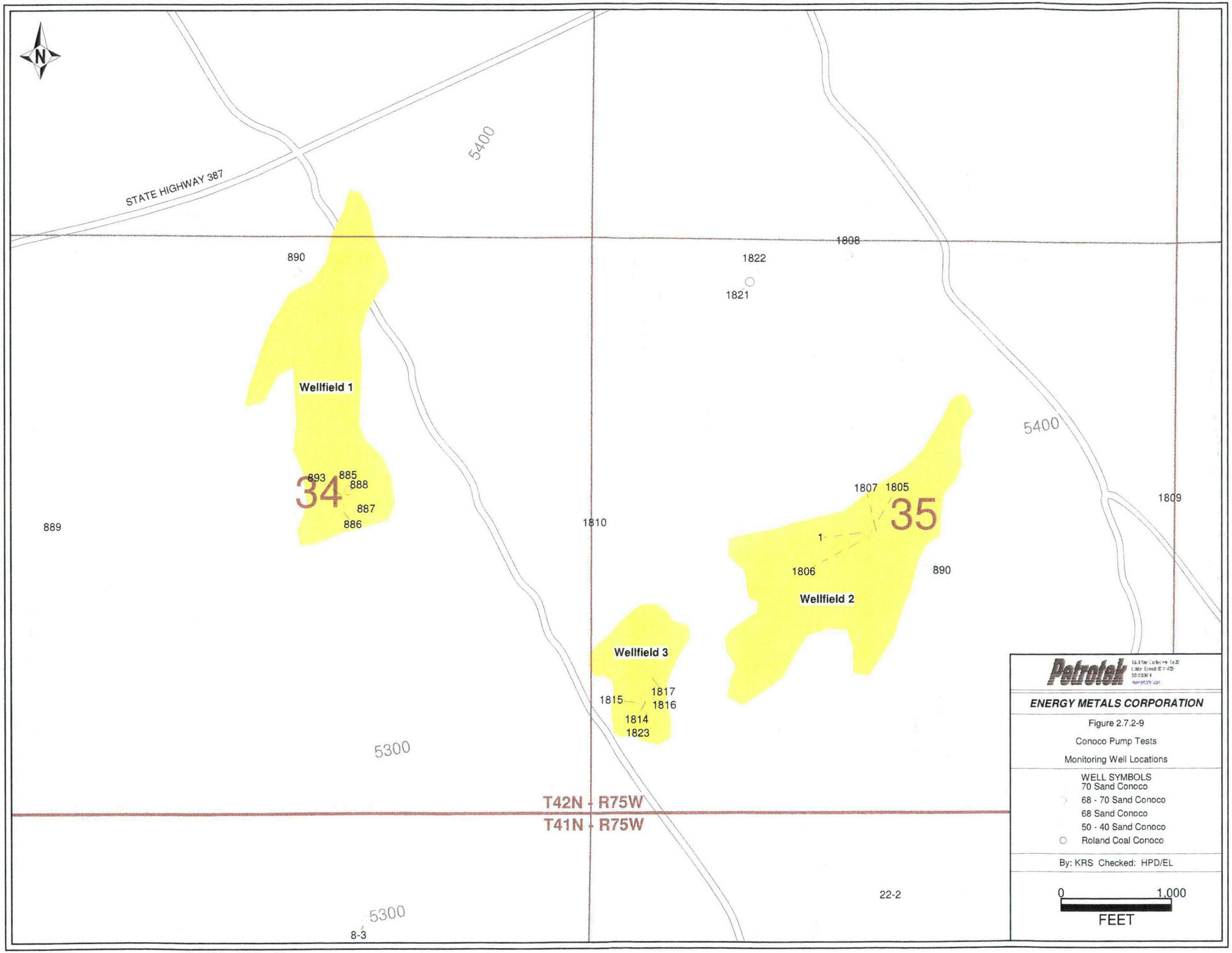
N
STATE HIGHWAY 387
5400
890
1808
1822
1821
Wellfield 1
893
885
888
34
887
886
889
1810
5400
1809
1807
1805
35
1
1806
890
Wellfield 2
Wellfield 3
1817
1815
1816
1814
1823
5300
T42N - R75W
T41N - R75W
22-2
5300
8-3
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Figure 2.7.2-9
Conoco Pump Tests
Monitoring Well Locations
WELL SYMBOLS
70 Sand Conoco
68 - 70 Sand Conoco
68 Sand Conoco
50 - 40 Sand Conoco
Roland Coal Conoco
By: KRS Checked: HPD/EL
0
1,000
FEET

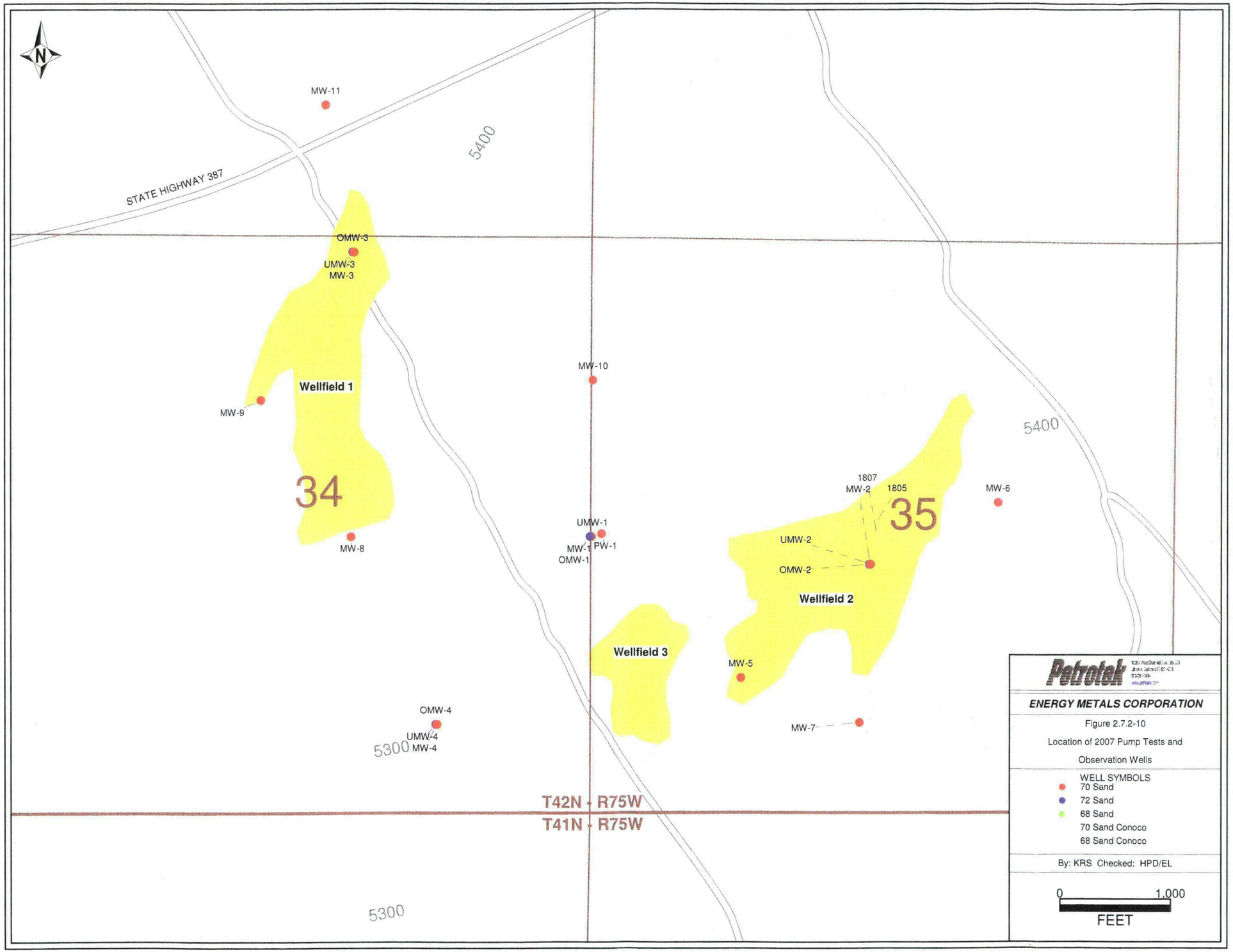
N
MW-11
STATE HIGHWAY 387
5400
OMW-3
UMW-3
MW-3
MW-10
Wellfield 1
MW-9
34
MW-8
UMW-1
MW-1
PW-1
OMW-1
1807
MW-2
1805
35
MW-6
UMW-2
OMW-2
Wellfield 2
Wellfield 3
MW-5
MW-7
OMW-4
UMW-4
MW-4
5300
T42N - R75W
T41N - R75W
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Figure 2.7.2-10
Location of 2007 Pump Tests and
Observation Wells
WELL SYMBOLS
70 Sand
72 Sand
68 Sand
70 Sand Conoco
68 Sand Conoco
By: KRS Checked: HPD/EL
0
1,000
FEET

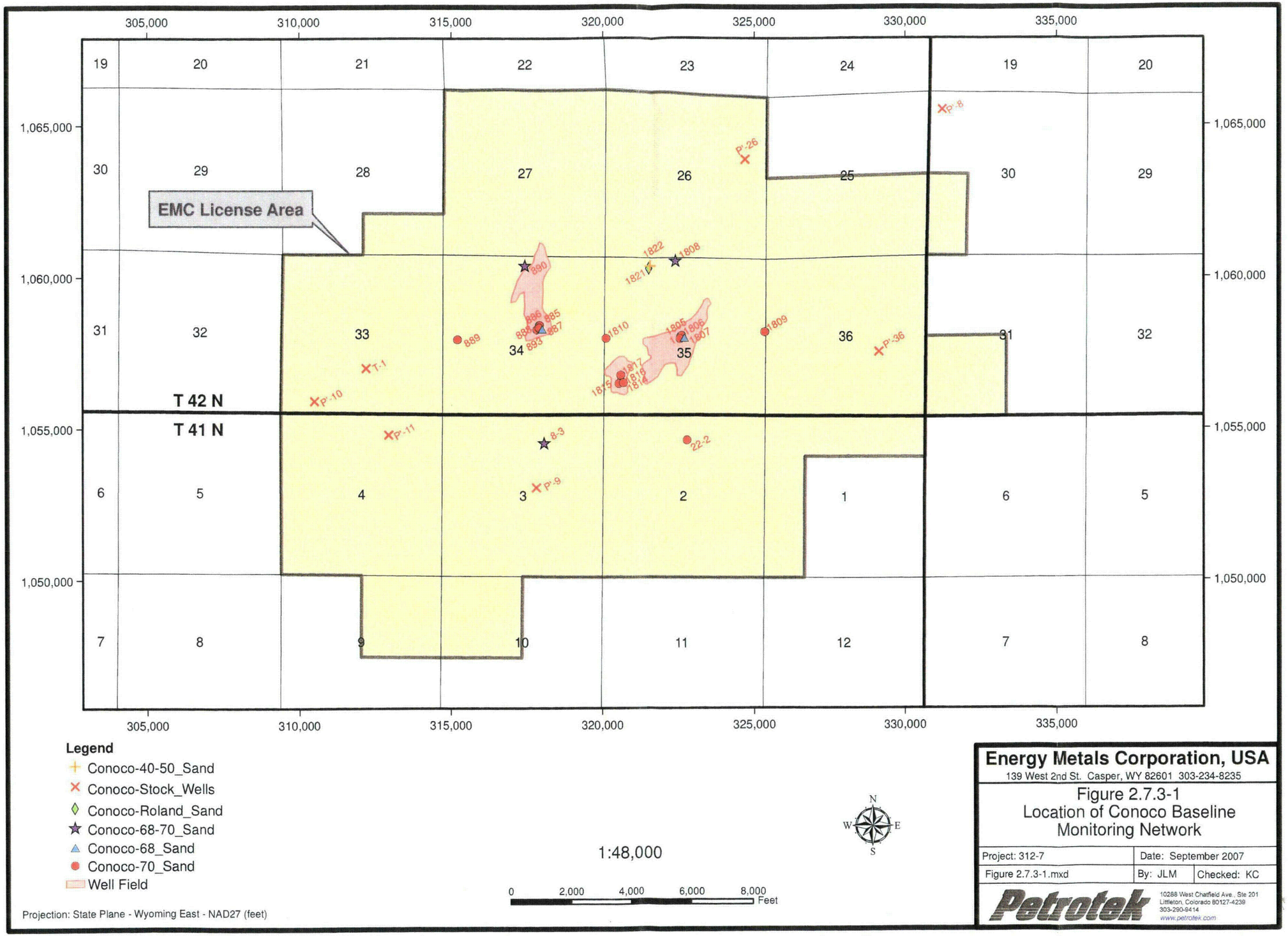

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Figure 2.7.3-1
Location of Conoco Baseline Monitoring Network

Project: 312-7	Date: September 2007	
Figure 2.7.3-1.mxd	By: JLM	Checked: KC

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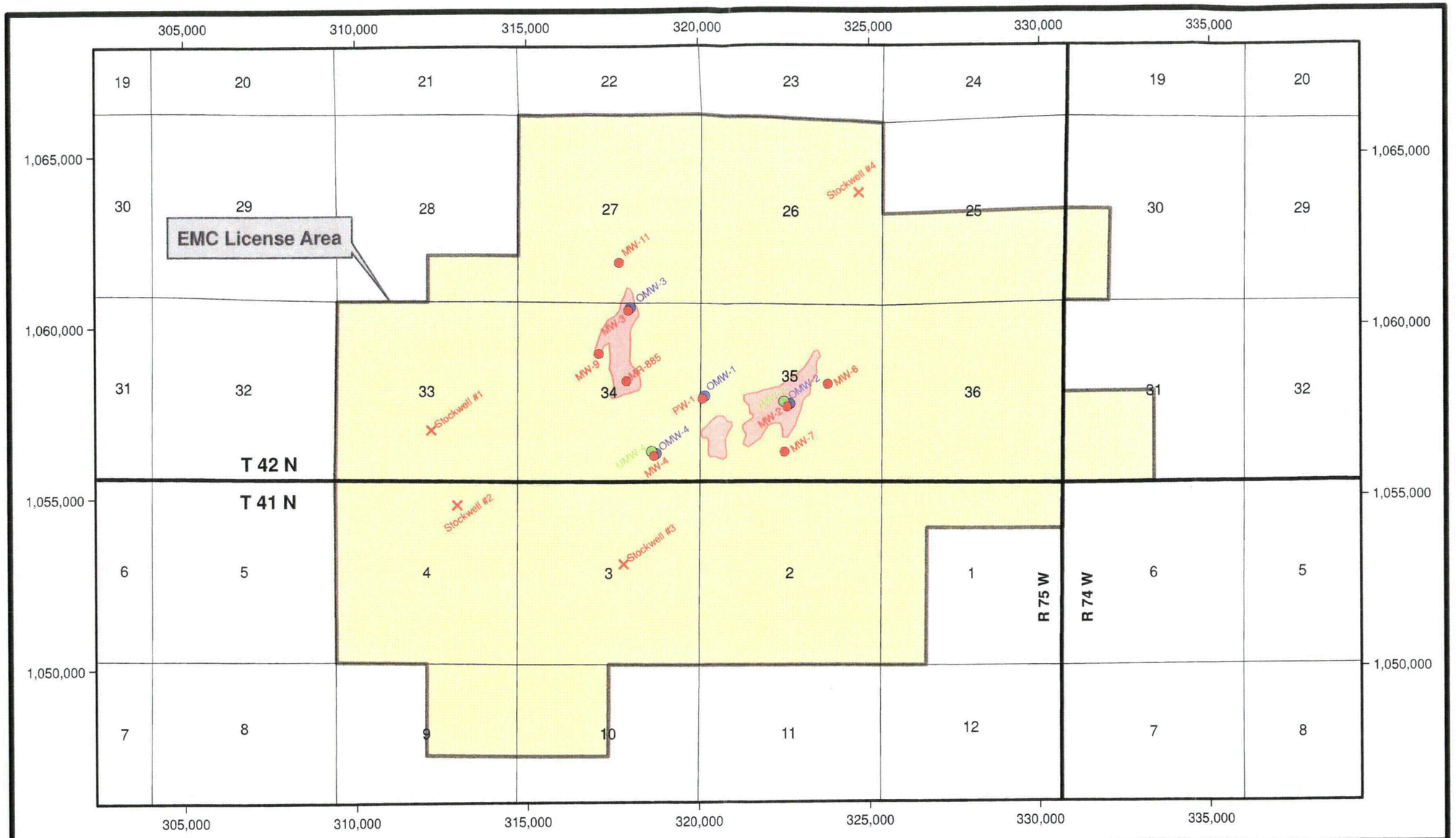

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Figure 2.7.3-2
Location of EMC Baseline Monitoring Network

Project: 312-7	Date: Setember 2007	
Figure 2.7.3-2.mxd	By: JLM	Checked: KC

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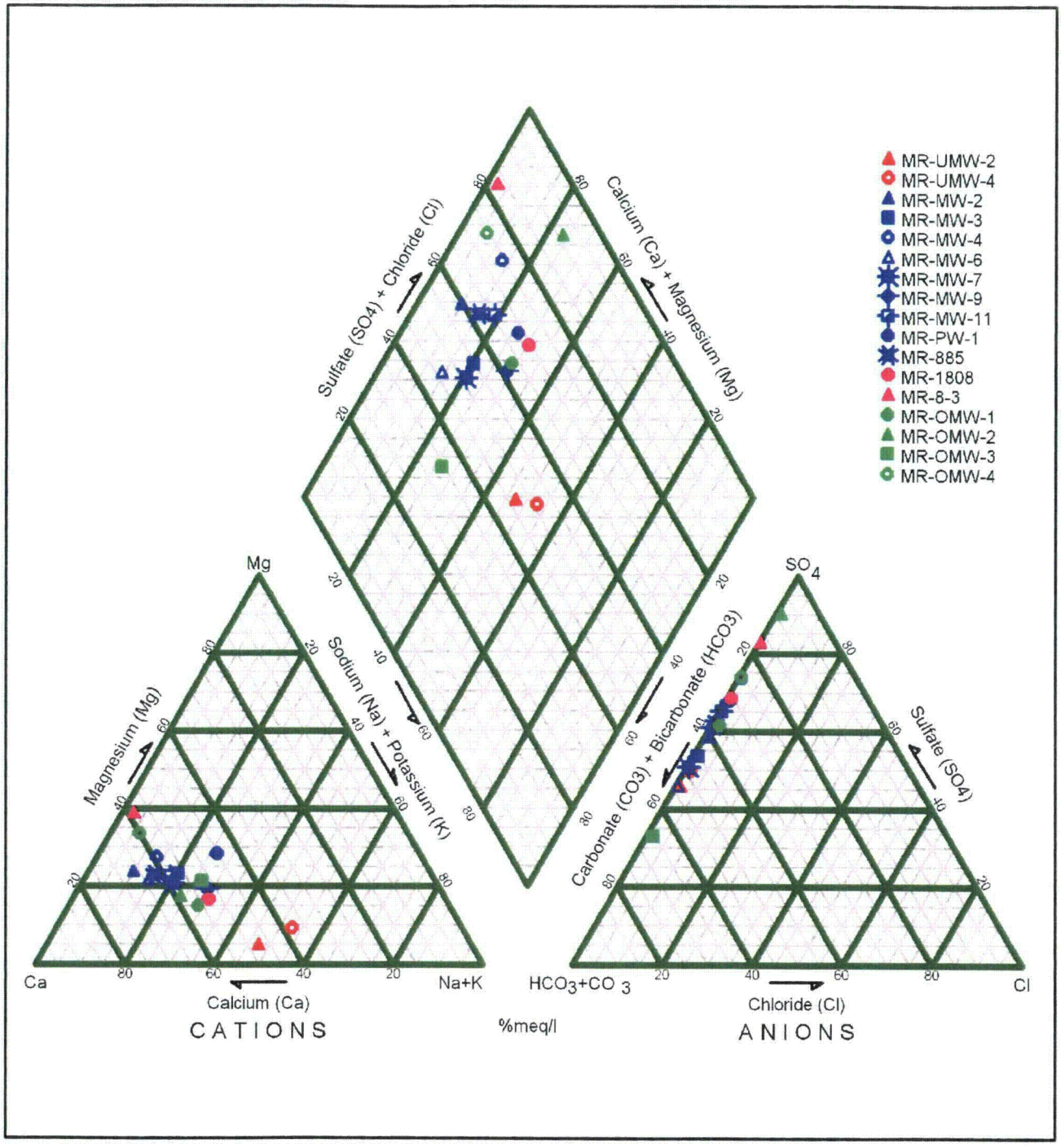

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Figure 2.7.3-3
Piper Diagram - Average Water Quality in Monitor Wells, Moore Ranch

Project: 312-7	Date: September 2007	
Figure 2.7.3-3.mxd	By: JLM	Checked: KC

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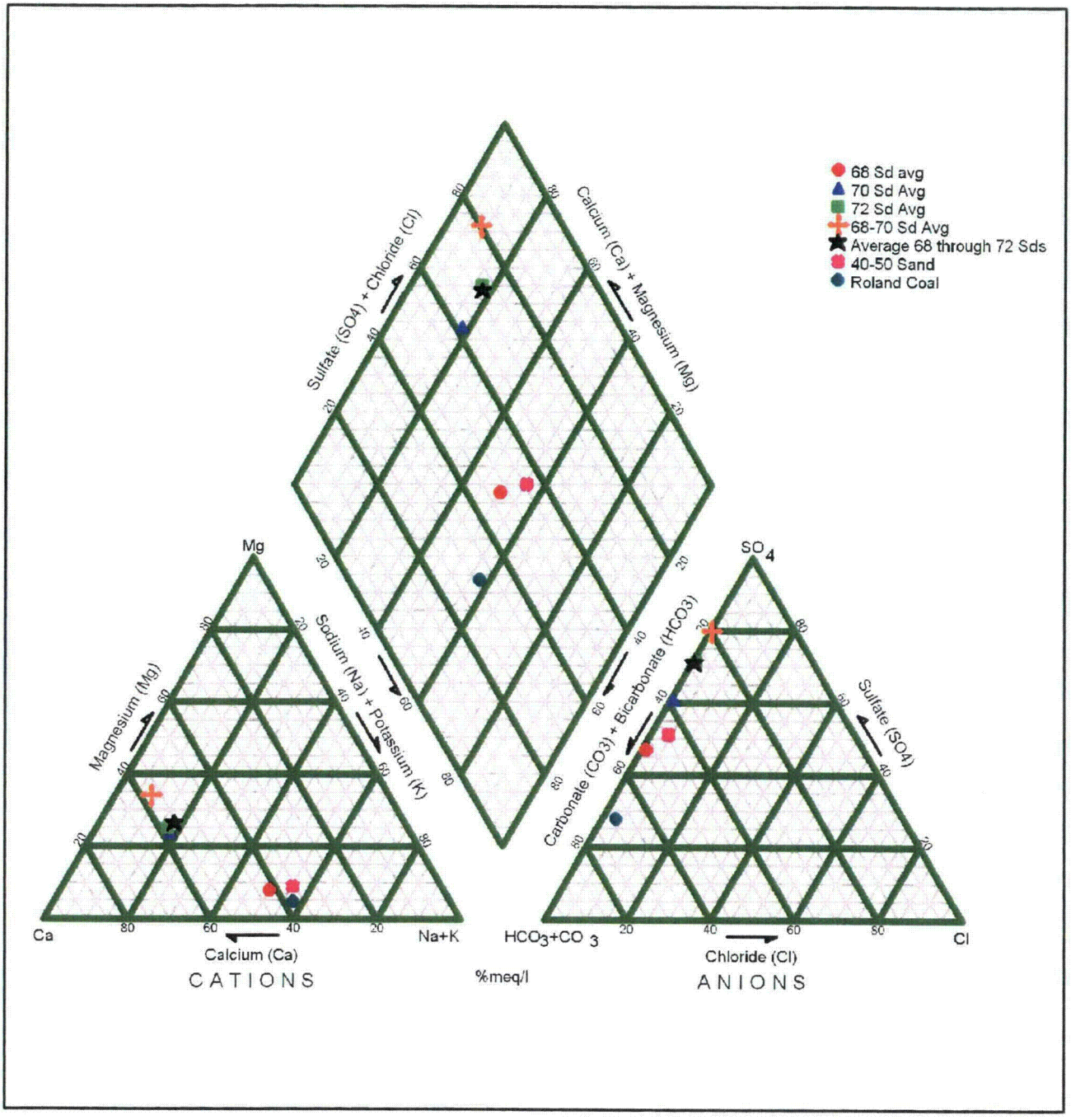

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Figure 2.7.3-4
Piper Diagram - Average Water Quality in Aquifers, Moore Ranch

Project: 312-7	Date: September 2007	
Figure 2.7.3-4.mxd	By: JLM	Checked: KC

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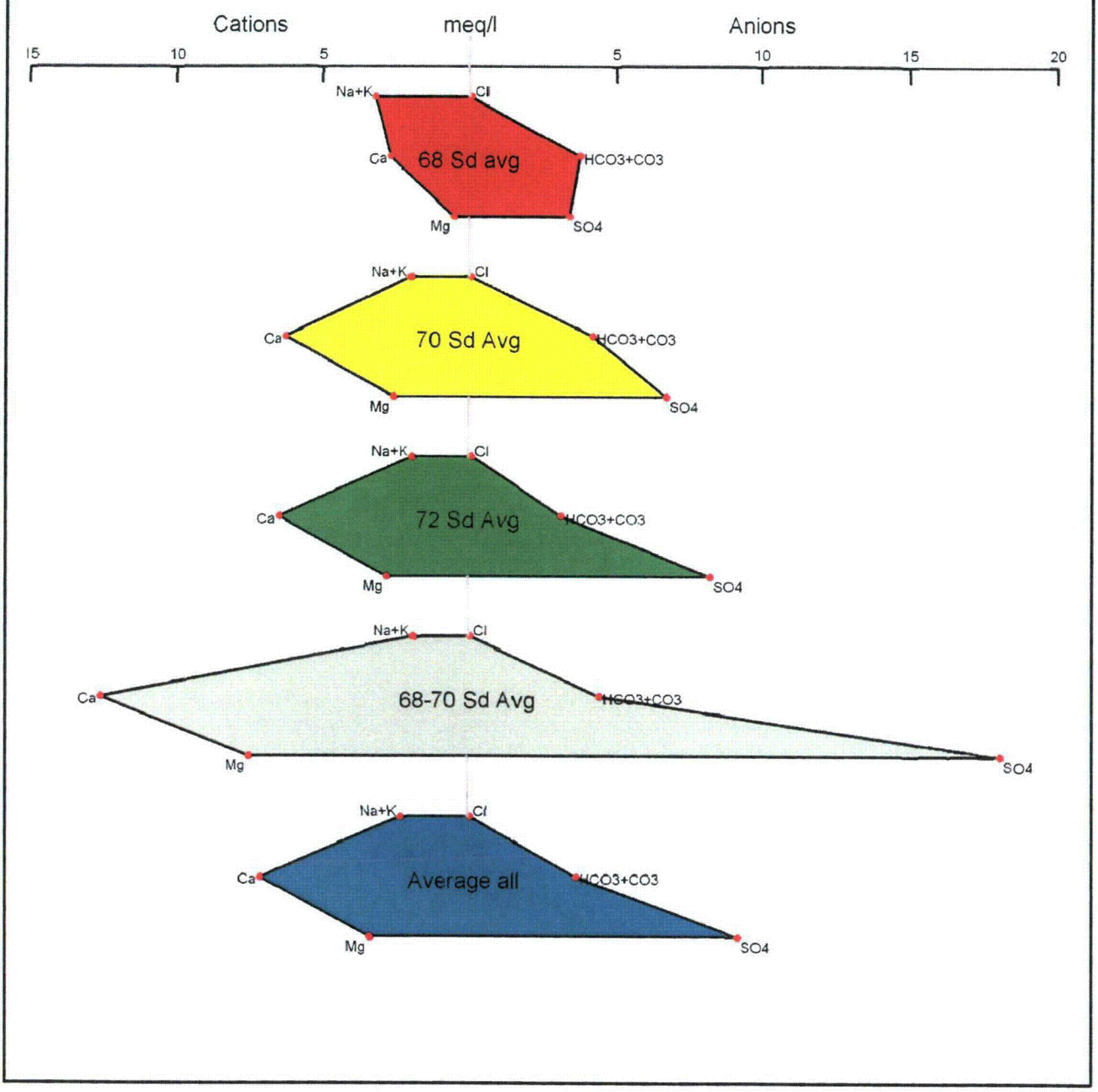

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Figure 2.7.3-5
Stiff Diagram-Water Quality in Aquifers Within the Permit Area, Moore Ranch

Project: 312-7	Date: September 2007	
Figure 2.7.3-5.mxd	By: JLM	Checked: KC

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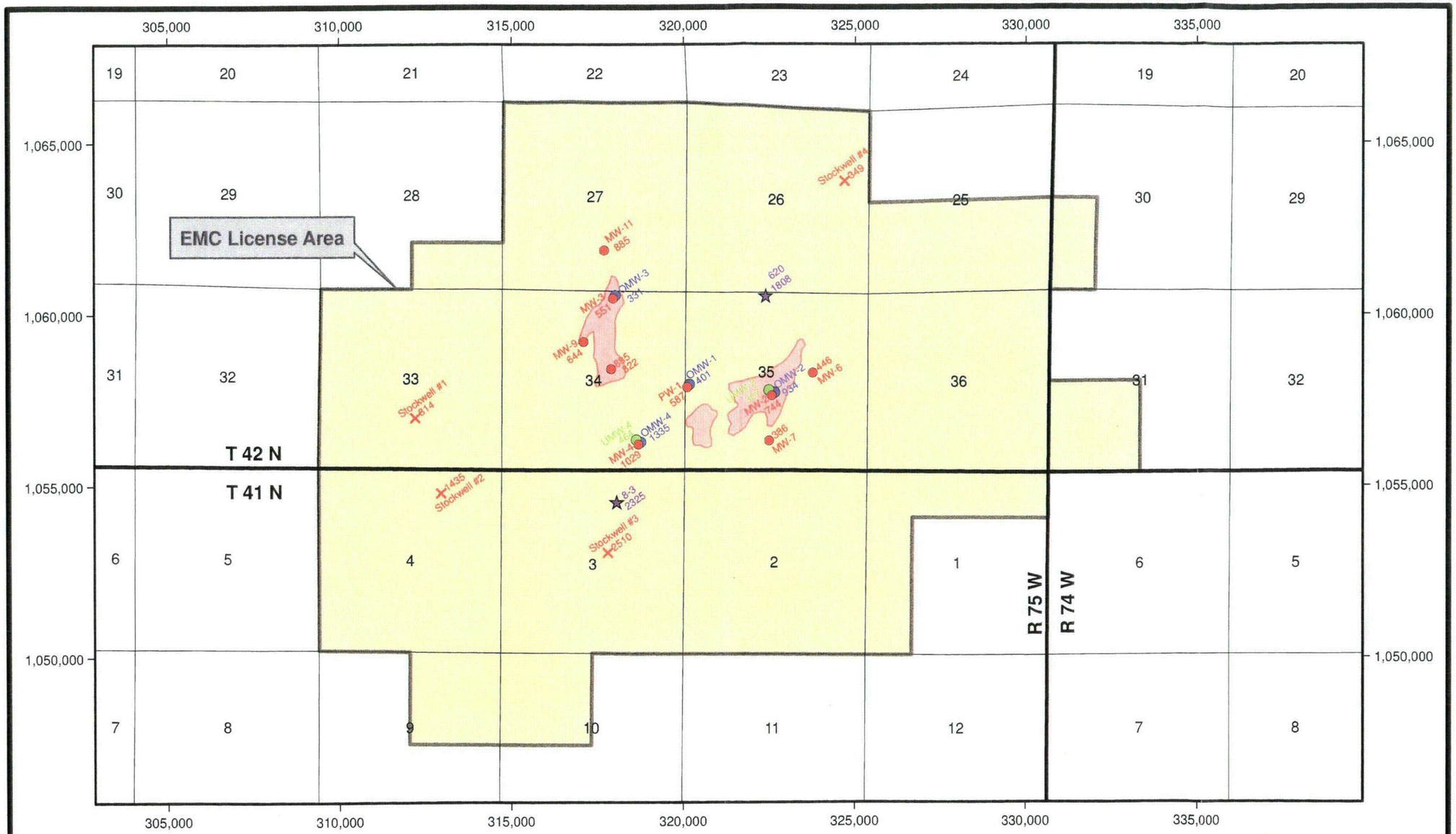

Legend

- Production Zone (70 Sand)
- Underlying Aquifer (68 Sand)
- Overlying Aquifer (72 Sand)
- Completed in 68 and 70 Sand
- Private Well
- Well Field

Projection: State Plane - Wyoming East - NAD27 (feet)

1:48,000

0 2,000 4,000 6,000 8,000 Feet

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Figure 2.7.3-6
2007 TDS Distribution
(mg/L)

Project: 312-7	Date: September 2007	
Figure 2.7.3-6.mxd	By: JLM	Checked: KC

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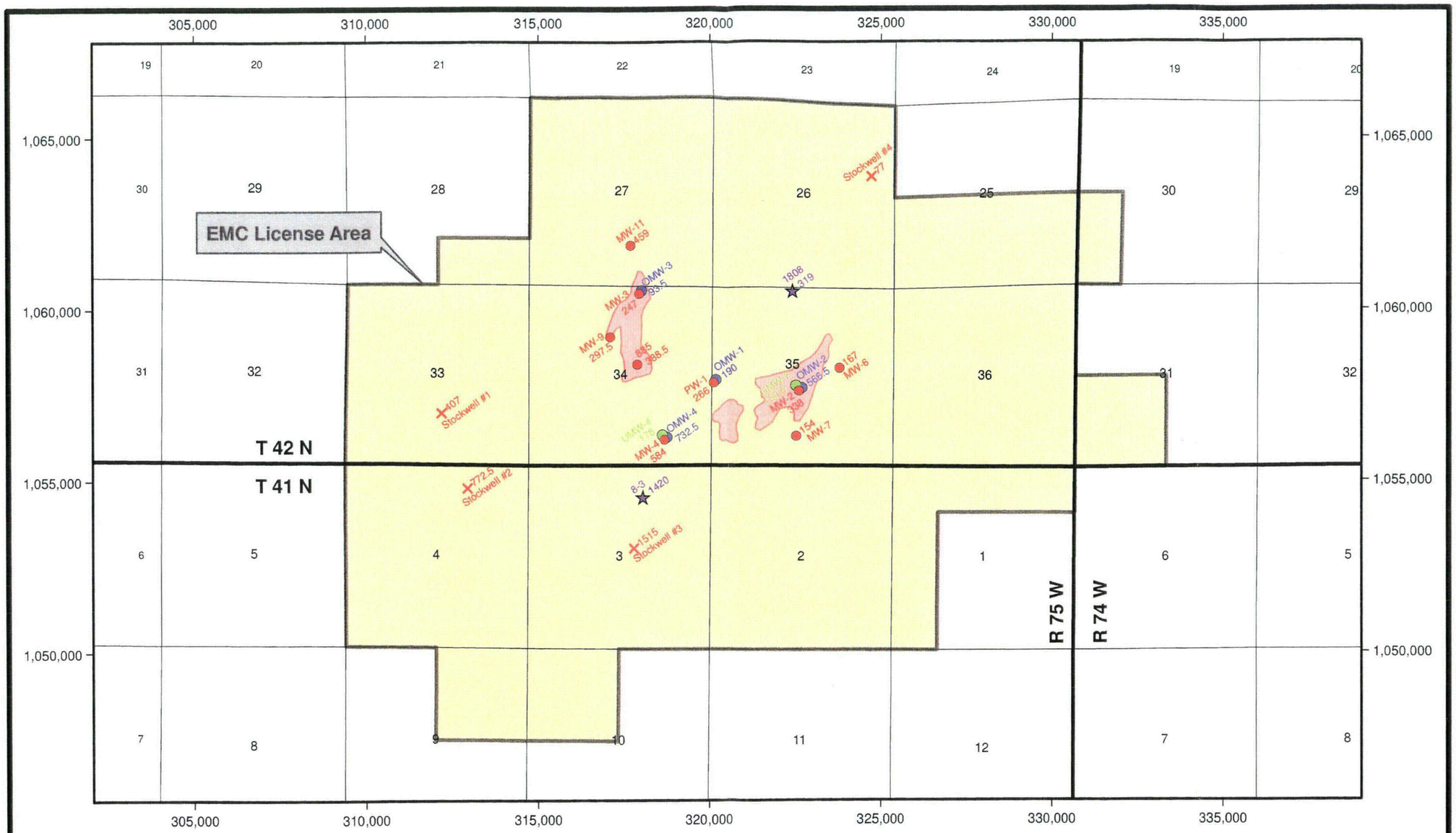

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Figure 2.7.3-7
2007 Sulfate Distribution
(mg/L)

Project: 312-7	Date: September 2007	
Figure 2.7.3-7.mxd	By: JLM	Checked: KC

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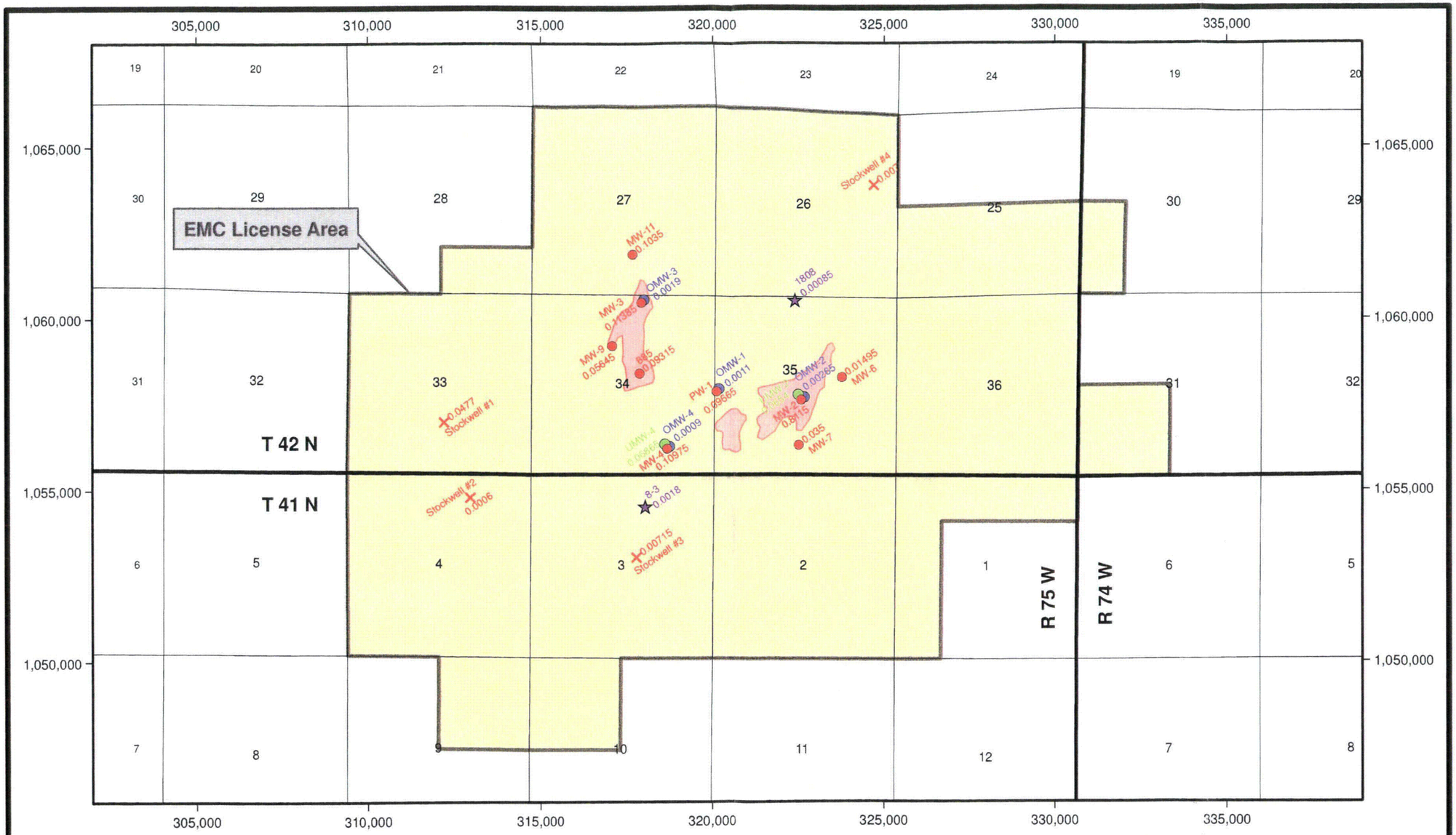

Legend

- Production Zone (70 Sand)
- Underlying Aquifer (68 Sand)
- Overlying Aquifer (72 Sand)
- Completed in 68 and 70 Sand
- Private Well
- Well Field

Projection: State Plane - Wyoming East - NAD27 (feet)

1:48,000

0 2,000 4,000 6,000 8,000 Feet

N W E S

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Figure 2.7.3-8
2007 Uranium Distribution
(mg/L)

Project: 312-7	Date: September 2007	
Figure 2.7.3-8.mxd	By: JLM	Checked: KC

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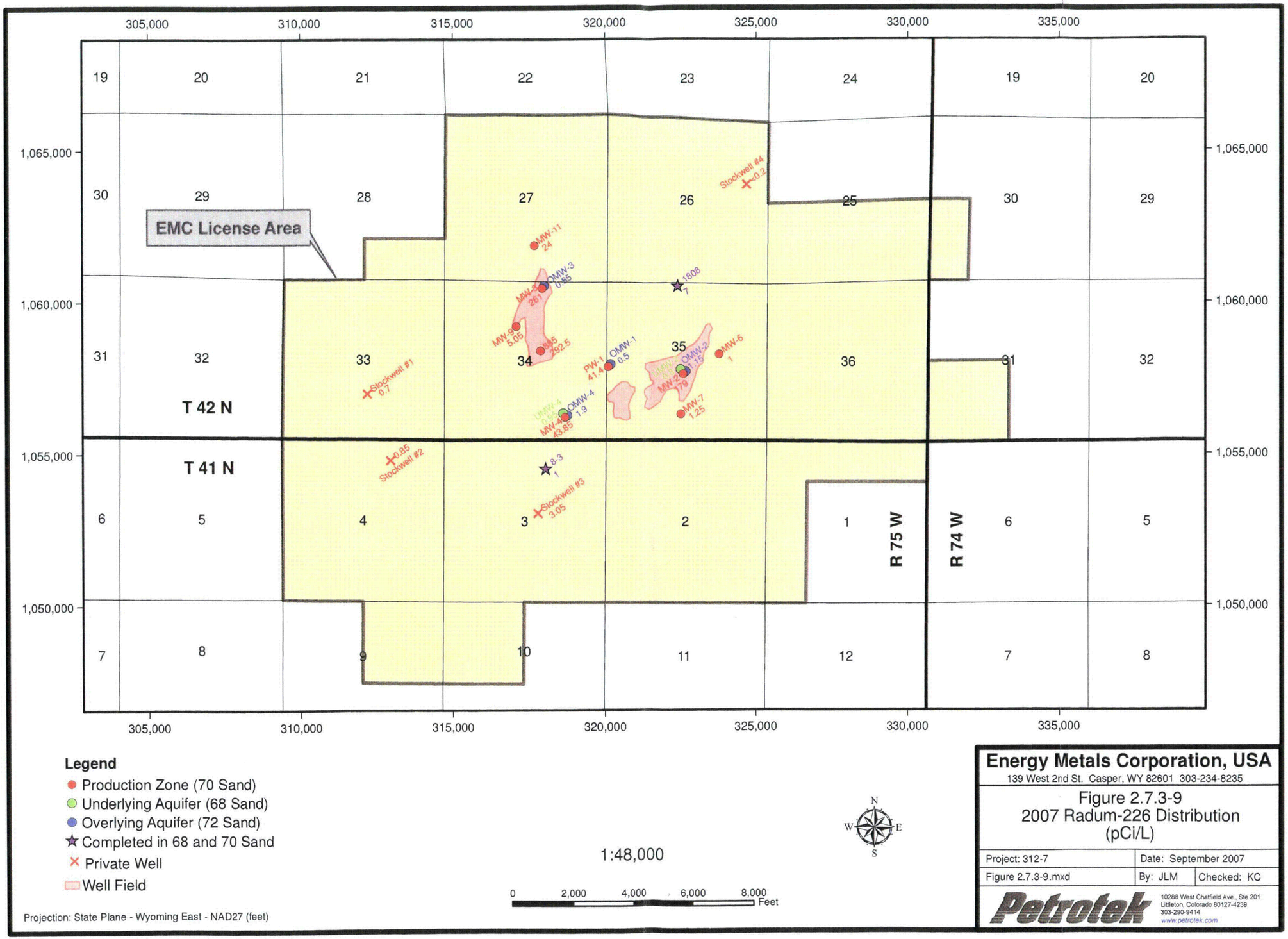

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Figure 2.7.3-9
2007 Radum-226 Distribution
(pCi/L)

Project: 312-7	Date: September 2007	
Figure 2.7.3-9.mxd	By: JLM	Checked: KC

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