

EXXON COAL AND MINERALS COMPANY

POST OFFICE BOX 1314 • HOUSTON, TEXAS 77251-1314

MINING COORDINATION & RESOURCE MANAGEMENT

April 27, 1987

Re: Radioactive Material
License No. 8-1431

Texas Department of Health
Bureau of Radiation Control
Division of Licensing, Registration
and Standards
1100 West 49th Street
Austin, Texas 78756-3189

Attention: Mr. Warren D. Snell, Chief
Uranium and Nuclear Waste Management Program

Gentlemen:

Subject: Ray Point Tailings Basin Reclamation - Weekly Progress Report No. 19
(week ending 4/25/87)

In accordance with License Condition No. 22(c), progress of tailings basin reclamation activities for the subject time period is summarized below.

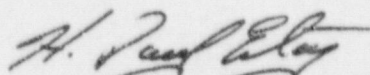
Earthmoving operations were sustained for six days during the report period. The major effort was on grading subgrade on the interior of the tailings basin, and placing compacted fill at the toe of external slopes at the south side of the tailings basin.

Earthmoving work during the forthcoming week will be concentrated on placing compacted cover over the interior of the tailings basin.

Copies of WWL daily reports generated during the week are attached.

If you have any questions regarding this information, please call me at either (512) 786-2586 or (713) 978-5438.

Respectfully,



H. Paul Estey
Supervisory Reclamation Engineer
Felder Reclamation Project
P. O. Box 827
Three Rivers, Texas 78071

HPE:st
Attachments (as noted) 5579R
c - J. D. Patton
L. L. Miller

A DIVISION OF EXXON CORPORATION

9801050027 870427
PDR WASTE
WM-183

PDR



Water, Waste & Land, Inc.
CONSULTING ENGINEERS & SCIENTISTS
Creeside Two Building
2629 Redwing Road, Suite 200
Fort Collins, CO 80526

DAILY REPORT

Project: EXXON-FELDER RECLAMATION
Project # 2066
Name: G. GRAHAM

Date: 4/19/87
Weather: _____

WORK PERFORMED: NO WORK PERFORMED, EASTER SUNDAY.

TESTING PERFORMED: _____

INSTRUCTIONS: _____

COMMENTS: _____

SIGNED: Ray S. Graham



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DAILY REPORT

Project: ERSON- FELDER RECLAMATION
Project # 2066
Name: G. GRAHAM

Date: 4/20/87
Weather: SUNNY + WINDY
85°

WORK PERFORMED: COMPACTION TINNING ON FILL PLACED PREVIOUSLY.
SCRAPERS FAR AHEAD OF COMPACTION CAPABILITIES. TOPSOIL PLACED
ON WEST EMBANKMENT SLOPE, AND AREAS WITHIN IMPOUNDMENT ABOVE
SUBGRADE WERE CUT.

TESTING PERFORMED: FIELD DENSITY TESTS, 4 OUT OF 5 TESTS PASSED.
FAILED TEST WILL BE RETESTED TOMORROW AFTER ADDITIONAL
COMPACTION.

INSTRUCTIONS:

COMMENTS: ADVISED CONTRACTOR AGAIN THAT ADDITIONAL COMPACTORS
WERE NEEDED AS SOON AS POSSIBLE. NO FILL MATERIAL WAS
PLACED TODAY BECAUSE OF LARGE VOLUME OF FILL ALREADY IN PLACE
WHICH STILL REQUIRES COMPACTION. ADVISED CONTRACTOR TO RUN
COMPACTOR AFTER SCRAPERS SHUT DOWN FOR THE DAY TO INCREASE
AMOUNT OF FILL PLACED AND COMPACTED DAILY.

SIGNED:

Jay S. [Signature]

NUCLEAR DENSITY GAUGE DATA SHEET

STANDARD COUNT		
DENSITY STD. COUNT	DS	7659
MOISTURE STD. COUNT	MS	2748

PROJECT 2066

DATE 4/20

EXAMINER - FELDER

GAUGE OPERATOR G.G.

TEST NUMBER	1-4-20	2-4-20	3-4-20	4-4-20	5-4-20	4-4-20	RETEST
LOCATION	G+25	H+70	J+85	J+30	G+70	J+30	
STATION	9+60	8+80	6+10	7+60	10+20	7+60	
OFFSET							
ELEVATION	2 ND LIFT	2 ND LIFT	2 ND LIFT	2 ND LIFT	2 ND LIFT	2 ND LIFT	
MODE / DEPTH	6"	6"	6"	6"	6"	6"	
DENSITY COUNT	7536	7950	8395	8462	7839	9437	
DENSITY COUNT RATIO	.984	1.040	1.096	1.105	1.024	1.232	
WET DENSITY (PCF)	130.1	127.25	124.6	124.2	128	118.5	
MOISTURE COUNT	1030	1120	1173	1363	1035	1061	
MOISTURE COUNT RATIO	.375	.408	.427	.496	.377	.386	
MOISTURE COEFFICIENT (PCF)	14.3	15.75	16.6	17.6	14.4	14.8	
DRY DENSITY (PCF)	115.8	111.5	108	104.6	113.6	103.7	
MOISTURE CONTENT (%)	12.3	14.1	15.4	18.7	12.7	14.2	
MAX OBTAINABLE DRY DENSITY (PCF)	113	113	113	113	113	113	
OPTIMUM MOISTURE CONTENT (%)	12-19	12-19	12-19	12-19	12-19	12-19	
PERCENT ACTIVE COMPACTION (%)	103	99	96	93	101	92	

W = $\frac{Y_H}{Y_{MAX}}$ FROM PROCTOR CURVE FOR SOIL

W = $\frac{Y_H}{Y_{MAX}}$ FROM PROCTOR CURVE FOR SOIL

P = $\frac{Y}{Y_{MAX}}$ DRY ; Y_{MAX}



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DAILY REPORT

Project: EXXON-FELDER RECLAMATION
Project # 2066
Name: G. GRAHAM

Date: 4/21/87
Weather: _____

WORK PERFORMED: COMPACTION EFFORTS CONTINUING. THE FIRST LIFT
OF COMPACTED FILL WAS PLACED ON SOUTH EMBANKMENT SLOPE
AND WILL BE TESTED TOMORROW.

TESTING PERFORMED: _____

INSTRUCTIONS: _____

COMMENTS: THE ONLY FILL PLACED TODAY WAS APPROX. 100 yd³ ON
THE SOUTH EMBANKMENT SLOPE.

SIGNED: Gay S. Graham

NUCLEAR DENSITY GAUGE DATA SHEET

STANDARD COUNT		
DENSITY STD. COUNT	DS	7643
MOISTURE STD. COUNT	MS	2771

PROJECT 2066DATE 4/21/87EXXON - FELDERGAUGE OPERATOR G. G.

			RETEST	RETEST				
TEST NUMBER			4-4-20	3-14-16	1-4-21	2-4-21		
LOCATION			J+30	M+70	K+20	I+0		
STATION			7+60	2+80	7+15	9+50		
OFFSET								
ELEVATION			2 ND LIFT	1 ST LIFT	2 ND LIFT	2 ND LIFT		
MOIST/DEPTH			6"	6"	6"	6"		
DENSITY COUNT	DC	FROM GAUGE	7302	8211	7022	7267		
DENSITY COUNT RATIO	DR	$DR = DC \div DS$	.955	1.074	.919	.95		
WET DENSITY (PCF)	γ_{WET}	FROM DENSITY TABLE AT DR	131.75	125.6	133.75	131.9		
MOISTURE COUNT	MC	FROM GAUGE	1047	1256	1440	1319		
MOISTURE COUNT RATIO	MR	$MR = MC \div MS$	.378	.453	.520	.476		
MOISTURE CONTENT (PCE)	γ_H	FROM MOISTURE TABLE AT MR	14.45	17.7	20.6	18.7		
DRY DENSITY (PCF)	γ_{DRY}	$\gamma_{DRY} = \gamma_{WET} - \gamma_H$	117.3	107.9	113.15	113.2		
MOISTURE CONTENT (%)	W	$W = \gamma_H \div \gamma_{DRY}$	12.3	16.4	18.2	16.5		
MAX OBTAINABLE DRY DENSITY (PCF)	γ_{MAX}	FROM PROCTOR CURVE FOR SOIL	113	113	113	113		
OPTIMUM MOISTURE CONTENT (%)	W_{OPT}	FROM PROCTOR CURVE FOR SOIL	12-19	12-19	12-19	12-19		
RELATIVE COMPACTION (%)	P	$P = \gamma_{DRY} \div \gamma_{MAX}$	104	95	100	100		



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DAILY REPORT

Project: EXXON-FELDER RECLAMATION
Project # 2066
Name: G. GRAHAM

Date: 4/22/87
Weather: 85° PLY
CLOUDY

WORK PERFORMED: COMPACTED FILL BEING PLACED ON SOUTH
EMBANKMENT SLOPE AND SOME FILL PLACED IN IMPOUNDMENT
OVER AREA APPROVED FOR DENSITY AND MOISTURE.

TESTING PERFORMED: FIELD DENSITY TESTS ON FIRST TWO LIFTS
OF COMPACTED FILL PLACED ON TOE OF SOUTH EMBANKMENT
SLOPE.

INSTRUCTIONS:

COMMENTS: CONTRACTOR IS FULLY AWARE THAT NOT ENOUGH COMPACTION
EQUIPMENT IS HINDERING PROGRESS. HE STATED THEY HAVE
BEEN TRYING TO OBTAIN ADDITIONAL COMPACTOR(S), AS
RECOMMENDED, AND EXPECTED THEM TO BE ON SITE IN THE
NEXT FEW DAYS.

SIGNED: Ray S. [Signature]

NUCLEAR DENSITY GAUGE DATA SHEET

STANDARD COUNT		
DENSITY STD. COUNT	DS	7735
MOISTURE STD. COUNT	MS	2739

PROJECT 2066

DATE 4/22/87

EXXON - FELDER

GAUGE OPERATOR G.G.

RETRY

TEST NUMBER			1-4-22	1-4-22	2-4-22				
LOCATION									
STATION									
OFFSET									
ELEVATION			1 ST LIFT	1 ST LIFT	2 ND LIFT				
MOUL/DEPTH			1'	1'	1'				
DENSITY COUNT	DC	FROM GAUGE	1653	1334	1937				
DENSITY COUNT RATIO	DR	$DR = DC \div DS$	.214	.172	.237				
WET DENSITY (PCF)	γ_{WET}	FROM DENSITY TABLE AT DR	122.3	129.75	119.0				
MOISTURE COUNT	MC	FROM GAUGE	1543	1356	1543				
MOISTURE COUNT RATIO	MR	$MR = MC \div MS$	.563	.495	.563				
MOISTURE CONTENT (PCF)	γ_H	FROM MOISTURE TABLE AT MR	22.5	19.5	22.5				
DRY DENSITY (PCF)	γ_{DRY}	$\gamma_{DRY} = \gamma_{WET} - \gamma_H$	99.8	110.25	96.5				
MOISTURE CONTENT (%)	W	$W = \gamma_H \div \gamma_{DRY}$	22.5	17.7	23				
MAX OBTAINABLE DRY DENSITY (PCF)	γ_{MAX}	FROM PROCTOR CURVE FOR SOIL	113	113	97 ⁽¹⁾				
OPTIMUM MOISTURE CONTENT (%)	W _{OPT}	FROM PROCTOR CURVE FOR SOIL	12-19	12-19	23				
RELATIVE COMPACTION (%)	P	$P = \gamma_{DRY} \div \gamma_{MAX}$	88	98	99.5				

(1) EMBANKMENT MATERIAL - PROCTOR CURVE 3/26, $\gamma_{max} = 97$, $\%W_{opt} = 23$



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DAILY REPORT

Project: EXXON-FELDER RECLAMATION
Project # 2066
Name: G. GRAHAM

Date: 4/23/87
Weather: 90°
PLY SUNNY

WORK PERFORMED: COMPACTED FILL PLACEMENT CONTINUING ON SOUTH
EMBANKMENT SLOPE. THE AREA AT THE BOTTOM OF SLOPE ABOVE
WELL TW-3 WAS COMPLETED.

TESTING PERFORMED: FIELD DENSITY AND MOISTURE TESTS, ALL PASSED

INSTRUCTIONS: -

COMMENTS: EMBANKMENT MATERIAL WAS USED TO FILL THE AREA ON THE
SOUTH EMBANKMENT SLOPE. THIS MATERIAL COMPACTS READILY TO
OVER 100% STD. PROCTOR AND IS WORKING WELL FOR COMPACTED FILL.
DENSITY AND MOISTURE VALUES USED FOR FIELD TESTS WERE AS GIVEN
IN BILL PRICE MEMO OF 4/3/87. ADDITIONAL COMPACTOR EXPECTED TO
BE ON SITE TOMORROW.

SIGNED: Ray S. [Signature]

NUCLEAR DENSITY GAUGE DATA SHEET

STANDARD COUNT		
DENSITY STD. COUNT	DS	7590
MOISTURE STD. COUNT	MS	2781

PROJECT 2066

DATE 4/23

EXXON-FELDER

GAUGE OPERATOR G. GRAHAM

TEST NUMBER			1-4-23	2-4-23	3-4-23	4-4-23	5-4-23		
LOCATION									
STATION									
OFFSET									
ELEVATION			3 RD LIFT	4 TH LIFT	5 TH LIFT	6 TH LIFT	7 TH LIFT		
MODE/DEPTH			1'	1'	1'	1'	1'		
DENSITY COUNT	DC	FROM GAUGE	1559	1691	1732	1928	1740		
DENSITY COUNT RATIO	DR	$DR = DC \div DS$	.205	.216	.228	.250	.229		
WET DENSITY (PCF)	γ_{WET}	FROM DENSITY TABLE AT DR	124	122	120.25	117.25	120.1		
MOISTURE COUNT	MC	FROM GAUGE	1594	1365	1411	1305	1311		
MOISTURE COUNT RATIO	MR	$MR = MC \div MS$	.573	.491	.507	.469	.471		
MOISTURE CONTENT (PCF)	γ_H	FROM MOISTURE TABLE AT MR	22.8	19.3	20.1	18.4	18.5		
DRY DENSITY (PCF)	γ_{DRY}	$\gamma_{DRY} = \gamma_{WET} - \gamma_M$	101.2	102.7	100.15	98.95	101.6		
MOISTURE CONTENT (%)	W	$W = \gamma_M \div \gamma_{DRY}$	22.5	19	20	18.6	18.2		
MAX OBTAINABLE DRY DENSITY (PCF)	γ_{MAX}	FROM PROCTOR CURVE FOR SOIL	97 ⁽¹⁾	97	97	97	97		
OPTIMUM MOISTURE CONTENT (%)	w_{OPT}	FROM PROCTOR CURVE FOR SOIL	18-24 ⁽¹⁾	18-24	18-24	18-24	18-24		
RELATIVE COMPACTION (%)	P	$P = \gamma_{DRY} \div \gamma_{MAX}$	104	106	103	102	105		

(1) EMBANKMENT MATERIAL - PROCTOR CURVE 3/26

* THESE TESTS WERE IN FILL PLACED AT BOTTOM OF SOUTH EMBANKMENT SLOPE ABOVE WELL TW-3.
ALL WERE LOCATED IN THE VICINITY OF STA 10+0



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DAILY REPORT

Project: EXXON-FELDER RECLAMATION
Project # 2066
Name: G. GRAHAM

Date: 4/24/87
Weather: SUNNY 90°

WORK PERFORMED: COMPACTION OF FILL MATERIAL ALREADY IN PLACE IN
TAILINGS BASIN. NO ADDITIONAL FILL PLACED AS NO AREAS ARE
READY TO RECEIVE ADDITIONAL FILL. FILL IN PLACE WILL TAKE
APPROX. 3 DAYS TO COMPACT.

TESTING PERFORMED: FIELD DENSITY AND MOISTURE IS

INSTRUCTIONS: -

COMMENTS: SCRAPERS NOT RUNNING TODAY TO ALLOW COMPACTOR
TIME TO COMPACT LOOSE FILL ALREADY IN PLACE. SCRAPERS WILL
NOT BE PLACING FILL UNTIL MONDAY MORNING WHEN THERE IS
ENOUGH AREA COMPACTED AND TESTED TO PROVIDE A DAYS WORK
FOR THE SCRAPERS. COMPACTOR WILL RUN OVER THE WEEKEND.

SIGNED: Ray S. Zeh

NUCLEAR DENSITY GAUGE DATA SHEET

STANDARD COUNT		
DENSITY STD. COUNT	DS	7720
MOISTURE STD. COUNT	MS	2757

PROJECT EXXON - FELDER DATE 4/24/87
2066 GAUGE OPERATOR G. GRAHAM

			RETEST				RETEST		
TEST NUMBER			1-4-24	2-4-24	2-4-24	3-4-24	3-4-24	4-4-24	
LOCATION			I+50	H+50	H+50	I+85	I+85	J+50	
STATION			9+0	9+75	9+75	9+75	9+75	8+20	
OFFSET									
ELEVATION			2 ND LIFT	2 ND LIFT	2 ND LIFT	2 ND LIFT	2 ND LIFT	2 ND LIFT	
MODE/DEPTH			6"	6"	6"	6"	6"	6"	
DENSITY COUNT	DC	FROM GAUGE	7418	9575	6974	8841	7321	7823	
DENSITY COUNT RATIO	DR	$DR = DC \div DS$	.961	1.240	.903	1.145	.948	1.013	
WET DENSITY (PCF)	γ_{WET}	FROM DENSITY TABLE AT DR	131.3	118.1	134.5	122.25	132	128.6	
MOISTURE COUNT	MC	FROM GAUGE	1370	1053	1417	898	1206	12-?	
MOISTURE COUNT RATIO	MR	$MR = MC \div MS$	.497	.382	.514	.326	.437	.443	
MOISTURE CONTENT (PCF)	γ_H	FROM MOISTURE TABLE AT MR	19.6	14.65	20.4	12.2	17.1	17.3	
DRY DENSITY (PCF)	γ_{DRY}	$\gamma_{DRY} = \gamma_{WET} - \gamma_H$	111.7	103.45	114.1	110.05	114.9	111.3	
MOISTURE CONTENT (%)	W	$W = \gamma_H \div \gamma_{DRY}$	17.5	14.2	17.9	11	14.8	15.5	
MAX OBTAINABLE DRY DENSITY (PCF)	γ_{MAX}	FROM PROCTOR CURVE FOR SOIL	113	113	113	113	113	113	
OPTIMUM MOISTURE CONTENT (%)	W_{OPT}	FROM PROCTOR CURVE FOR SOIL	12-19	12-19	12-19	12-19	12-19	12-19	
RELATIVE COMPACTION (%)	P	$P = \gamma_{DRY} \div \gamma_{MAX}$	99	91.5	101	97	102	98.5	



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DAILY REPORT

Project: EXXON-FELDER RECLAMATION
Project # 2066
Name: G. GRAHAM

Date: 4/25/87
Weather: 85° DRY
CLOUDY

WORK PERFORMED: COMPACTION OF FILL IN TAILINGS BASIN

TESTING PERFORMED: —

INSTRUCTIONS: —

COMMENTS: SCRAPERS NOT RUNNING, NO ADDITIONAL FILL
PLACED. SECOND COMPACTOR BROUGHT ON SITE LATE TODAY
EXPECTED TO BE RUNNING TOMORROW. COMPACTION TAKING
PLACE ON LOOSE FILL PLACED LAST WEEK

SIGNED: Gay S. Joel



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DAILY REPORT

Project: EXXON-FELDER RECLAMATION
Project # 2066
Name: G. GRAHAM

Date: 4/26/87
Weather: _____

WORK PERFORMED: COMPACTION OF FILL IN TAILINGS BASIN, AND
SUBGRADE FINISH WORK ON SOUTH EMBANKMENT SLOPE.

TESTING PERFORMED: _____

INSTRUCTIONS: _____

COMMENTS: NO ADDITIONAL FILL PLACED TODAY. SECOND
COMPACTOR RUNNING TODAY, COMPACTION CONTINUING ON FILL
PLACED LAST WEEK.

SIGNED: Gay S. [Signature]