# Groundwater Monitoring Plan
# Gas Hills, Wyoming

Umetco Minerals Corporation
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Grand Junction, Colorado 81506

~~April 2015~~August 2018

## Contents



## Tables



## Figures

## 1.0 INTRODUCTION

This plan has been developed by Umetco Minerals Corporation (Umetco) to detail a groundwater compliance monitoring program as required by License Condition (LC) 35 of U.S. Nuclear Regulatory Commission (NRC) Materials License SUA-648 (license). This plan identifies the monitoring locations for each groundwater flow regime and associated monitoring requirements, and describes how Umetco will define and address potential exceedances of Alternate Concentration Limits (ACLs). This plan was developed from recommendations and commitments described in NRC and Umetco correspondence dated between September 2012 and April 2015 (i.e., NRC letter of September 24, 2012, Umetco letter of March 7, 2013, NRC letter of April 24, 2013, Umetco letter of September 17, 2013, NRC letter of March 11, 2014, Umetco letter of April 15, 2014, NRC letter of May 8, 2014, NRC letter of November 6, 2014, Umetco letter of January 22, 2015, ~~and~~ Umetco letter of April 8, 2015, NRC letter and License Amendment of January 19, 2017, and Umetco letter of August 8, 2018).

## 2.0 MONITORING APPROACH

Two types of monitoring locations are to be sampled as part of the Gas Hills groundwater compliance monitoring program:

(1) Point Of Compliance (POC) wells required by the license; and

(2) Non-POC wells and spring used to ensure that ACL constituents will meet background concentrations at the Point Of Exposure (POE).

Table 1 lists the POC and non-POC monitoring locations and details their corresponding monitoring requirements. Groundwater monitoring locations are shown on Figure 1 for both the Western and Southwestern flow regimes.

### 2.1 Point of Compliance Wells

The four POC monitoring wells, specified in LC 35B and LC 35C (i.e., Western Flow Regime (WFR) wells MW1 and MW21A and Southwestern Flow Regime (SWFR) wells GW7 and GW8), will be sampled annually, between May 1st and July 31st, for the ACL constituents (i.e. arsenic, beryllium, lead-210, nickel, combined radium-226 and -228, selenium, thorium-230 and uranium-natural). Concentrations of the ACL constituents in these wells must meet the levels dictated in LC 35B and LC 35C. These wells will also be sampled annually for sulfate and chloride.

### 2.2 Non-POC Monitoring Locations

The non-POC monitoring locations (~~twelve~~ fifteen wells and one spring), listed in Table 1 by flow regime, will be sampled for the ACL constituents annually at the same time that sampling is performed at the POC wells. Sampling will be conducted with analyses for the ACL constituents, sulfate and chloride as indicated in Table 1. These wells were selected to provide early detection of downgradient or vertical contaminant migration, to verify predicted groundwater flow and geochemical attenuation modeling presented in the ACL application, and to ensure that ACL constituent concentrations will be reduced to background levels at the POE. These locations were selected on the basis of one or more of the following criteria, with input from the NRC:

- location within the plume and in "hot spot" locations;
- location proximal to historic extraction wells;
- location at the downgradient edge of the plume;
- location downgradient of site impacts; and/or
- location of discharge points for groundwater (e.g. Iron Springs).

Rationales supporting the selection of sampling locations are documented in Table 2.

**Table 1 Summary of Groundwater Compliance Monitoring**

| Well Type | Western Flow Regime Wells [1] | Southwestern Flow Regime Wells [2] | Monitoring Requirements [3] |
|---|---|---|---|
| Point of Compliance (POC) Wells | MW1<br>MW21A | GW7<br>GW8 | Wells to be sampled annually for Alternate Concentration Limit (ACL) constituents [1, 2]. Sampling to be conducted between May 1st and July 31st until license termination.<br>The results to be used in tandem with results from non-POC wells in a groundwater conditions report submitted to the NRC, annually.<br>Wells to be sampled annually for sulfate and chloride. |
| Non-POC Wells | MW25<br>MW28<br>MWI64<br>~~MW70A~~<br>MW71B<br>MW77<br>MW83<br>MW84<br>MW85<br>MW86<br>Iron Springs [4] | MW72<br>MW82 | Wells to be sampled annually for ACL constituents [1, 2], chloride and sulfate. Sampling to be conducted between May 1st and July 31st until license termination.<br>The results to be used in tandem with results from POC wells in a groundwater conditions report submitted to the NRC, annually. |

[1] Alternate Concentration Limits (ACLs) established for the Western Flow Regime Point of Compliance (POC) wells MW1 and MW21A are as follows: arsenic = 1.8 milligrams per liter (mg/L); beryllium = 1.64 mg/L; lead-210 = 35.4 picocuries per liter (pCi/L); nickel = 13.0 mg/L; combined radium-226 and -228 = 250 pCi/L; selenium = 0.161 mg/L; thorium-230 = 57.4 pCi/L; and uranium-natural = 11.9 mg/L.

[2] ACLs established for the Southwestern Flow Regime POC wells GW7 and GW8 are as follows: arsenic = 1.36 mg/L; beryllium = 1.70 mg/L; lead-210 = 189 pCi/L; nickel = 9.34 mg/L; combined radium-226 and -228 = 353 pCi/L; selenium = 0.53 mg/L; thorium-230 = 44.8 pCi/L; and uranium-natural = 34.1 mg/L.

[3] Results of monitoring to be provided to the Nuclear Regulatory Commission (NRC) by September 30 of the same year as required by License Condition 35A of Materials License SUA-648.

[4] Iron Springs is the surface water sample point required by Wyoming Department of Environmental Quality.

**Table 2 Rationales Supporting Selection of Non-Point of Compliance Monitoring Wells**

| WESTERN FLOW REGIME | |
|---|---|
| **Monitoring Location** | **Basis for Selection** |
| MWI64 | This well is located at the downgradient edge of the Above-Grade Tailings Impoundment (AGTI). Since 2000, concentrations of the ACL constituents in this well have declined and are all below background concentrations, indicating that the tailings-impacted groundwater has migrated past the well. Continued sampling of this well will verify that groundwater in this area is uncontaminated and remains uncontaminated, thus confirming that there is no leakage from the AGTI to the west, and demonstrate that only uncontaminated groundwater is moving in from upgradient. |
| ~~MW70A~~ | ~~This location is approximately 1,700 feet to the northwest of the restricted area. This well is screened in the upper portion of the Western Flow Regime and will monitor radial flow from the AGTI. Since 2000, concentrations of most ACL constituents in this well have stayed the same or declined, however several ACL constituents are above background concentrations. Monitoring at this well will be continued to verify generally decreasing trends in groundwater to the northwest of the AGTI.~~ |
| MW25 | Water quality data and isoconcentration plots indicate this well, located approximately 1,500 feet hydraulically downgradient of the AGTI, is appropriately located to monitor the leading edge of the plume. Since 2000, only concentrations of arsenic and nickel have increased in this well and are above background concentrations. |
| MW71B | This well is approximately 2,500 feet downgradient of the AGTI. It is screened in the lower portion of the Western Flow Regime and will indicate potential vertical migration. Since 2000, concentrations of the ACL constituents in this well have stayed the same or declined and are all below background concentrations. Continued sampling of this well will monitor the increasing trends in sulfate which are currently within the range of background concentrations. |
| MW28 | This well is located 2,500 feet hydraulically downgradient of the AGTI. This location appears to be at the leading edge of the groundwater plume. Since 2000, concentrations of most ACL constituents in this well have increased however most are still below background concentrations with the exception of radium 226+228. |
| MW77 | This location is near the proposed land transfer boundary, 4,000 feet hydraulically downgradient of the AGTI, and is representative of water quality at the Point of Exposure (POE). Since this well is the furthest downgradient, continued monitoring will provide an indication of ACL concentrations and indicate constituent attenuation upgradient of the POE. |
| MW83 | This well is located approximately 300 feet downgradient (west) of MW28. This well is intended to intercept peak radium-226+228 activities from upgradient and evaluate radium attenuation along the groundwater flow path. |
| MW84 | This well is located approximately 1300 feet downgradient (northwest) of MW21A. This well will be used to refine the groundwater flow direction, provide a point on the north side of the plume for evaluating plume migration, and delineating the northern extent of the plume. |
| MW85 | This well is located approximately 1400 feet northwest of MW28. This well is intended to intercept the leading edge of sulfate-impacted groundwater from the AGTI, and will provide an early indication of downgradient contaminant movement. |

**Table 2 Rationales Supporting Selection of Non-Point of Compliance Monitoring Wells, continued**

| WESTERN FLOW REGIME | |
|---|---|
| **Monitoring Location** | **Basis for Selection** |
| MW86 | This well is located approximately 500 feet northwest of MW71B and is screened in the upper portion of the aquifer. This well is intended to provide an early indication of downgradient contaminant movement and provide a shallower monitoring point to complement the deeper MW71B. |
| Iron Spring | This spring, approximately 10,000 feet from the AGTI, is the closest discharge point for groundwater migrating from the site. Groundwater modeling indicates no significant impacts to water quality resulting from site-derived constituents. |
| SOUTHWESTERN FLOW REGIME | |
| **Monitoring Location** | **Basis for Selection** |
| MW72 | Water quality data and isoconcentration plots indicate this well, located 1,000 feet southwest of the A-9 Repository, may be impacted from site derived constituents and is located near the downgradient edge of the groundwater plume migrating from the site. |
| MW82 | This well is the furthest downgradient location from the A-9 repository (approximately 1,300 feet). The well location was selected based on its position along the modeled axis of the plume and also because it is upgradient of Power Resources, Inc.'s proposed Mine Unit 5. |

## 3.0 EXCEEDANCE IDENTIFICATION AND VERIFICATION RESAMPLING

The monitoring approach described above and in Table 1 was developed to ensure that the groundwater ACLs are met, as well as to provide early detection of downgradient or vertical migration of site contaminants. As such, a mechanism for identifying exceedances and implementing appropriate responses to those exceedances must be identified.

### 3.1 General Approach to Identifying Exceedances

In identifying exceedances, the overall intent is to allow early detection of potential ACL exceedances, while minimizing the probability of false positive results - e.g., exceedances attributable to laboratory error or transient anomalous increases. Prediction limits are already built into the ACLs. Therefore, comparison of the single values (e.g., ACL vs. monitoring result) should suffice. However, several factors must be accounted for when evaluating results and identifying exceedances. These factors are discussed below.

#### *Significant Figures*

Significant figures must be accounted for when comparing predicted values with measured values. The following general approach should be employed. For results less than 1,000 mg/L, comparisons between measured values and predicted values should be based on 2 significant figures. For results exceeding 1,000 mg/L, comparisons should be made on the basis of 3 significant figures.

### *Verification Sampling*

Verification sampling is an integral component of exceedance identification. To avoid "false positives" due to laboratory error and/or transient increases, a statistically significant exceedance will not be declared or reported until the results of verification sampling are known. Umetco's proposed approach to verification sampling is discussed below and in Table 3.

## 3.2 ACL Constituents at Point of Compliance Wells

If any POC sample exceeds the ACL for one or more constituents, a second (verification) sample will be collected and analyzed within 3 months of obtaining the original sample to rule out laboratory error or transient increase. Analysis will only be necessary for constituents that exceed their ACLs. If the analyses of this first verification sample also results in an exceedance of the same ACL, Umetco will notify the NRC within 30 days of receiving the verification result. Contingent upon NRC approval, a second verification sample may be collected before corrective action measures are considered; this sample will be collected within 3 months of obtaining the results from the first verification sample.

If the second verification sample also results in an exceedance, Umetco will provide an "action plan" to the NRC within 60 days of receiving the results of the second verification sample. This action plan will describe appropriate corrective action(s), if necessary, and/or further analysis to ensure that no risk will be incurred at the POE. Such an analysis may require reassessment of model simulations and assumptions. This approach is detailed in Table 3.

## 3.3 ACL Constituents at Non-POC Wells

If any Non-POC sample exceeds the ACL for one or more constituents, the exceedance will be handled on a case-by-case basis through correspondence with NRC.

**Table 3 Exceedance Identification and Action Approaches**

| Monitoring Endpoint | Exceedance Identification and Verification Sampling Approach | Actions to be Implemented if Exceedances are Verified |
|---|---|---|
| ACL Constituents at POC Wells | If any POC sample exceeds the ACL for one or more constituents (accounting for significant figures), a verification sample will be analyzed within 3 months of obtaining the initial exceedance result(s). [*Re-analysis is only necessary for the constituent(s) exceeding the ACLs.*] | If the first verification sample also results in an exceedance of the same ACL, Umetco will notify the NRC within 30 days of receiving the first verification result. Contingent upon NRC approval, a second verification sample may be collected before corrective action measures are considered. The second verification sample will be analyzed within 3 months of obtaining the result(s) of the first verification sample.<br><br>If the second verification sample also results in an exceedance, Umetco will provide an "action plan" to the NRC within 60 days of receiving the results of the second verification sample. This action plan will describe appropriate corrective action(s), *if necessary*, and/or further analysis to ensure that no risk will be incurred at Point of Exposure (POE) locations. Such an analysis may require reassessment of model simulations and assumptions. |

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Table 1 lists the POC and non-POC monitoring locations and details their corresponding monitoring requirements. Groundwater monitoring locations are shown on Figure 1 for both the Western and Southwestern flow regimes.

### 2.1 Point of Compliance Wells

The four POC monitoring wells, specified in LC 35B and LC 35C (i.e., Western Flow Regime (WFR) wells MW1 and MW21A and Southwestern Flow Regime (SWFR) wells GW7 and GW8), will be sampled annually, between May 1$^{st}$ and July 31$^{st}$, for the ACL constituents (i.e. arsenic, beryllium, lead-210, nickel, combined radium-226 and -228, selenium, thorium-230 and uranium-natural). Concentrations of the ACL constituents in these wells must meet the levels dictated in LC 35B and LC 35C. These wells will also be sampled annually for sulfate and chloride.

### 2.2 Non-POC Monitoring Locations

The non-POC monitoring locations (fifteen wells and one spring), listed in Table 1 by flow regime, will be sampled for the ACL constituents annually at the same time that sampling is performed at the POC wells. Sampling will be conducted with analyses for the ACL constituents, sulfate and chloride as indicated in Table 1. These wells were selected to provide early detection of downgradient or vertical contaminant migration, to verify predicted groundwater flow and geochemical attenuation modeling presented in the ACL application, and to ensure that ACL constituent concentrations will be reduced to background levels at the POE. These locations were selected on the basis of one or more of the following criteria, with input from the NRC:

- location within the plume and in "hot spot" locations;
- location proximal to historic extraction wells;
- location at the downgradient edge of the plume;
- location downgradient of site impacts; and/or
- location of discharge points for groundwater (e.g. Iron Springs).

Rationales supporting the selection of sampling locations are documented in Table 2.

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| Well Type | Western Flow Regime Wells [1] | Southwestern Flow Regime Wells [2] | Monitoring Requirements [3] |
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| Non-POC Wells | MW25<br>MW28<br>MWI64<br>MW71B<br>MW77<br>MW83<br>MW84<br>MW85<br>MW86<br>Iron Springs [4] | MW72<br>MW82 | Wells to be sampled annually for ACL constituents [1, 2], chloride and sulfate. Sampling to be conducted between May 1st and July 31st until license termination.<br>The results to be used in tandem with results from POC wells in a groundwater conditions report submitted to the NRC, annually. |

[1] Alternate Concentration Limits (ACLs) established for the Western Flow Regime Point of Compliance (POC) wells MW1 and MW21A are as follows: arsenic = 1.8 milligrams per liter (mg/L); beryllium = 1.64 mg/L; lead-210 = 35.4 picocuries per liter (pCi/L); nickel = 13.0 mg/L; combined radium-226 and -228 = 250 pCi/L; selenium = 0.161 mg/L; thorium-230 = 57.4 pCi/L; and uranium-natural = 11.9 mg/L.

[2] ACLs established for the Southwestern Flow Regime POC wells GW7 and GW8 are as follows: arsenic = 1.36 mg/L; beryllium = 1.70 mg/L; lead-210 = 189 pCi/L; nickel = 9.34 mg/L; combined radium-226 and -228 = 353 pCi/L; selenium = 0.53 mg/L; thorium-230 = 44.8 pCi/L; and uranium-natural = 34.1 mg/L.

[3] Results of monitoring to be provided to the Nuclear Regulatory Commission (NRC) by September 30 of the same year as required by License Condition 35A of Materials License SUA-648.

[4] Iron Springs is the surface water sample point required by Wyoming Department of Environmental Quality.

**Table 2 Rationales Supporting Selection of Non-Point of Compliance Monitoring Wells**

| WESTERN FLOW REGIME | |
|---|---|
| **Monitoring Location** | **Basis for Selection** |
| MWI64 | This well is located at the downgradient edge of the Above-Grade Tailings Impoundment (AGTI). Since 2000, concentrations of the ACL constituents in this well have declined and are all below background concentrations, indicating that the tailings-impacted groundwater has migrated past the well. Continued sampling of this well will verify that groundwater in this area is uncontaminated and remains uncontaminated, thus confirming that there is no leakage from the AGTI to the west, and demonstrate that only uncontaminated groundwater is moving in from upgradient. |
| MW25 | Water quality data and isoconcentration plots indicate this well, located approximately 1,500 feet hydraulically downgradient of the AGTI, is appropriately located to monitor the leading edge of the plume. Since 2000, only concentrations of arsenic and nickel have increased in this well and are above background concentrations. |
| MW71B | This well is approximately 2,500 feet downgradient of the AGTI. It is screened in the lower portion of the Western Flow Regime and will indicate potential vertical migration. Since 2000, concentrations of the ACL constituents in this well have stayed the same or declined and are all below background concentrations. Continued sampling of this well will monitor the increasing trends in sulfate which are currently within the range of background concentrations. |
| MW28 | This well is located 2,500 feet hydraulically downgradient of the AGTI. This location appears to be at the leading edge of the groundwater plume. Since 2000, concentrations of most ACL constituents in this well have increased however most are still below background concentrations with the exception of radium 226+228. |
| MW77 | This location is near the proposed land transfer boundary, 4,000 feet hydraulically downgradient of the AGTI, and is representative of water quality at the Point of Exposure (POE). Since this well is the furthest downgradient, continued monitoring will provide an indication of ACL concentrations and indicate constituent attenuation upgradient of the POE. |
| MW83 | This well is located approximately 300 feet downgradient (west) of MW28. This well is intended to intercept peak radium-226+228 activities from upgradient and evaluate radium attenuation along the groundwater flow path. |
| MW84 | This well is located approximately 1300 feet downgradient (northwest) of MW21A. This well will be used to refine the groundwater flow direction, provide a point on the north side of the plume for evaluating plume migration, and delineating the northern extent of the plume. |
| MW85 | This well is located approximately 1400 feet northwest of MW28. This well is intended to intercept the leading edge of sulfate-impacted groundwater from the AGTI, and will provide an early indication of downgradient contaminant movement. |
| MW86 | This well is located approximately 500 feet northwest of MW71B and is screened in the upper portion of the aquifer. This well is intended to provide an early indication of downgradient contaminant movement and provide a shallower monitoring point to complement the deeper MW71B. |
| Iron Spring | This spring, approximately 10,000 feet from the AGTI, is the closest discharge point for groundwater migrating from the site. Groundwater modeling indicates no significant impacts to water quality resulting from site-derived constituents. |

**Table 2 Rationales Supporting Selection of Non-Point of Compliance Monitoring Wells, continued**

| SOUTHWESTERN FLOW REGIME | |
|---|---|
| **Monitoring Location** | **Basis for Selection** |
| MW72 | Water quality data and isoconcentration plots indicate this well, located 1,000 feet southwest of the A-9 Repository, may be impacted from site derived constituents and is located near the downgradient edge of the groundwater plume migrating from the site. |
| MW82 | This well is the furthest downgradient location from the A-9 repository (approximately 1,300 feet). The well location was selected based on its position along the modeled axis of the plume and also because it is upgradient of Power Resources, Inc.'s proposed Mine Unit 5. |

## 3.0 EXCEEDANCE IDENTIFICATION AND VERIFICATION RESAMPLING

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#### *Significant Figures*

Significant figures must be accounted for when comparing predicted values with measured values. The following general approach should be employed. For results less than 1,000 mg/L, comparisons between measured values and predicted values should be based on 2 significant figures. For results exceeding 1,000 mg/L, comparisons should be made on the basis of 3 significant figures.

#### *Verification Sampling*

Verification sampling is an integral component of exceedance identification. To avoid "false positives" due to laboratory error and/or transient increases, a statistically significant exceedance will not be declared or reported until the results of verification sampling are known. Umetco's proposed approach to verification sampling is discussed below and in Table 3.

### 3.2 ACL Constituents at Point of Compliance Wells

If any POC sample exceeds the ACL for one or more constituents, a second (verification) sample will be collected and analyzed within 3 months of obtaining the original sample to rule out laboratory error or transient increase. Analysis will only be necessary for constituents that exceed

their ACLs. If the analyses of this first verification sample also results in an exceedance of the same ACL, Umetco will notify the NRC within 30 days of receiving the verification result. Contingent upon NRC approval, a second verification sample may be collected before corrective action measures are considered; this sample will be collected within 3 months of obtaining the results from the first verification sample.

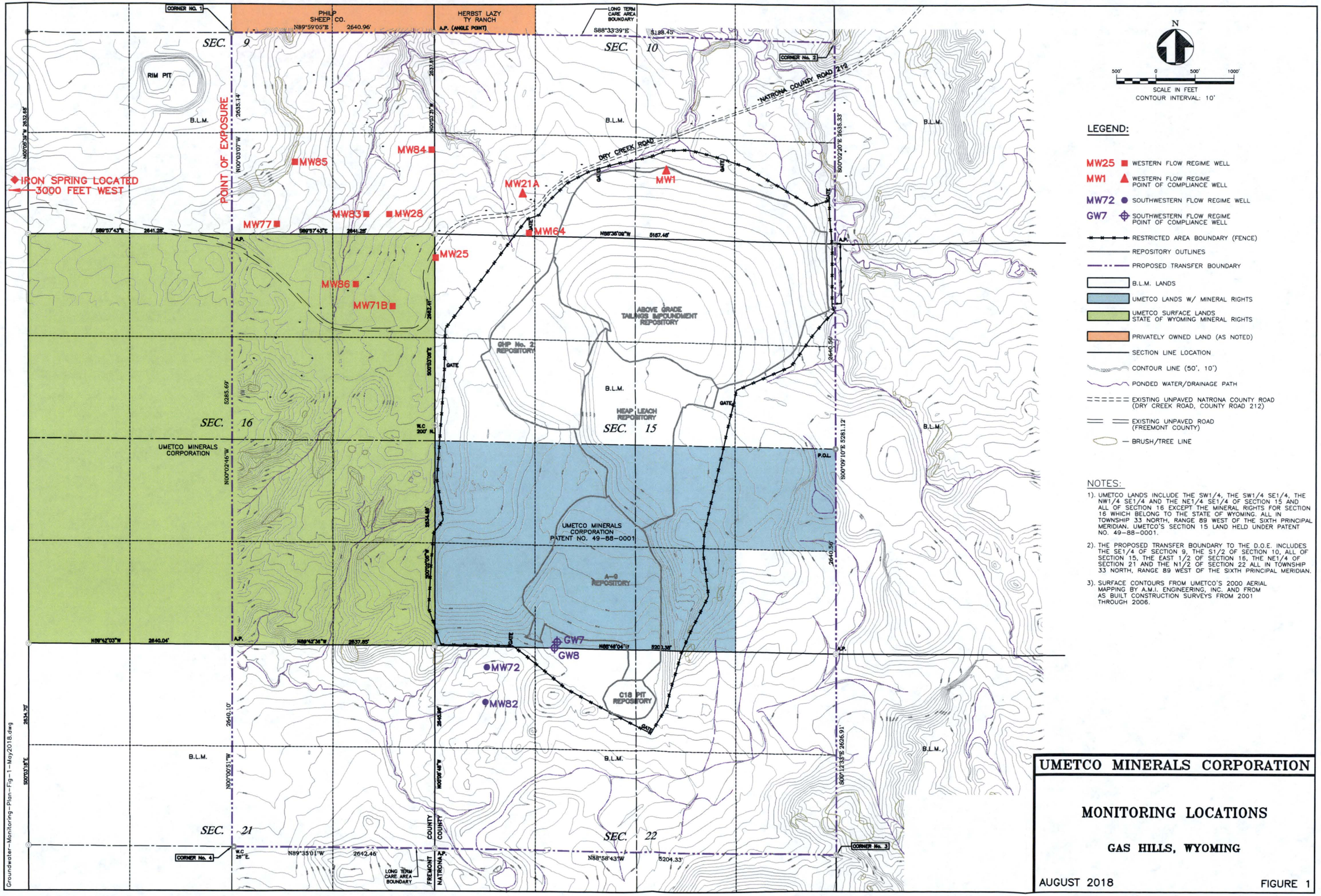
If the second verification sample also results in an exceedance, Umetco will provide an "action plan" to the NRC within 60 days of receiving the results of the second verification sample. This action plan will describe appropriate corrective action(s), if necessary, and/or further analysis to ensure that no risk will be incurred at the POE. Such an analysis may require reassessment of model simulations and assumptions. This approach is detailed in Table 3.

## 3.3 ACL Constituents at Non-POC Wells

If any Non-POC sample exceeds the ACL for one or more constituents, the exceedance will be handled on a case-by-case basis through correspondence with NRC.

**Table 3 Exceedance Identification and Action Approaches**

| Monitoring Endpoint | Exceedance Identification and Verification Sampling Approach | Actions to be Implemented if Exceedances are Verified |
|---|---|---|
| ACL Constituents at POC Wells | If any POC sample exceeds the ACL for one or more constituents (accounting for significant figures), a verification sample will be analyzed within 3 months of obtaining the initial exceedance result(s).<br>[*Re-analysis is only necessary for the constituent(s) exceeding the ACLs.*] | If the first verification sample also results in an exceedance of the same ACL, Umetco will notify the NRC within 30 days of receiving the first verification result. Contingent upon NRC approval, a second verification sample may be collected before corrective action measures are considered. The second verification sample will be analyzed within 3 months of obtaining the result(s) of the first verification sample.<br>If the second verification sample also results in an exceedance, Umetco will provide an "action plan" to the NRC within 60 days of receiving the results of the second verification sample. This action plan will describe appropriate corrective action(s), *if necessary*, and/or further analysis to ensure that no risk will be incurred at Point of Exposure (POE) locations. Such an analysis may require reassessment of model simulations and assumptions. |




LEGEND:

- MW25 ■ WESTERN FLOW REGIME WELL
- MW1 ▲ WESTERN FLOW REGIME POINT OF COMPLIANCE WELL
- MW72 ● SOUTHWESTERN FLOW REGIME WELL
- GW7 ⊕ SOUTHWESTERN FLOW REGIME POINT OF COMPLIANCE WELL
- RESTRICTED AREA BOUNDARY (FENCE)
- REPOSITORY OUTLINES
- PROPOSED TRANSFER BOUNDARY
- B.L.M. LANDS
- UMETCO LANDS W/ MINERAL RIGHTS
- UMETCO SURFACE LANDS STATE OF WYOMING MINERAL RIGHTS
- PRIVATELY OWNED LAND (AS NOTED)
- SECTION LINE LOCATION
- CONTOUR LINE (50', 10')
- PONDED WATER/DRAINAGE PATH
- EXISTING UNPAVED NATRONA COUNTY ROAD (DRY CREEK ROAD, COUNTY ROAD 212)
- EXISTING UNPAVED ROAD (FREEMONT COUNTY)
- BRUSH/TREE LINE

NOTES:

1). UMETCO LANDS INCLUDE THE SW1/4, THE SW1/4 SE1/4, THE NW1/4 SE1/4 AND THE NE1/4 SE1/4 OF SECTION 15 AND ALL OF SECTION 16 EXCEPT THE MINERAL RIGHTS FOR SECTION 16 WHICH BELONG TO THE STATE OF WYOMING. ALL IN TOWNSHIP 33 NORTH, RANGE 89 WEST OF THE SIXTH PRINCIPAL MERIDIAN. UMETCO'S SECTION 15 LAND HELD UNDER PATENT NO. 49-88-0001.

2). THE PROPOSED TRANSFER BOUNDARY TO THE D.O.E. INCLUDES THE SE1/4 OF SECTION 9, THE S1/2 OF SECTION 10, ALL OF SECTION 15, THE EAST 1/2 OF SECTION 16, THE NE1/4 OF SECTION 21 AND THE N1/2 OF SECTION 22 ALL IN TOWNSHIP 33 NORTH, RANGE 89 WEST OF THE SIXTH PRINCIPAL MERIDIAN.

3). SURFACE CONTOURS FROM UMETCO'S 2000 AERIAL MAPPING BY A.M.I. ENGINEERING, INC. AND FROM AS BUILT CONSTRUCTION SURVEYS FROM 2001 THROUGH 2006.

**UMETCO MINERALS CORPORATION**

# MONITORING LOCATIONS

**GAS HILLS, WYOMING**

AUGUST 2018 FIGURE 1

Groundwater-Monitoring-Plan-Fig-1-May2018.dwg