



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 49TH WING (ACC)
HOLLOMAN AIR FORCE BASE NEW MEXICO



ENTERED



11/07/2015

Adam Kusmak
49 Civil Engineer Squadron,
Installation Management Flight Chief
550 Tabosa Avenue
Holloman AFB NM 88330-8458

New Mexico Environment Department
Attn: Mr. John Kieling, Chief
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe NM 87505-6303

Dear Mr. Kieling,

Holloman AFB is pleased to submit the Responses to NMED Comments on the *Final Nitrate Characterization Study Report Holloman AFB, NM* (NationView, 2014) for your review. The Air Force would appreciate a response prior to December 31, 2015 when the contract for the Nitrate Study expires.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact me (575) 572-3931 or by email at adam.kusmak@us.af.mil.

Sincerely,

KUSMAK.ADAM
.M.1263331806

Digitally signed by
KUSMAK.ADAM.M.1263331806
DN: c=US, o=U.S. Government,
ou=DoD, ou=PKI, ou=USAF,
cn=KUSMAK.ADAM.M.1263331806
Date: 2015.11.20 11:57:52 -0700

ADAM KUSMAK, GS-13, DAFC

Attachments:

Responses to NMED Comments Table: Final Nitrate Characterization Study Report (NationView, October 6, 2015), including Figure 7-1, Table 7-1 and Figure 4-11 (from the *Draft Final RI Report Investigation, Study and Recommendation for 29 Waste Sites Holloman AFB, NM*, Radian, 1992)

cc:

(w/ Atch)
Mr. David Strasser
Hazardous Waste Bureau
121 Tijeras Dr. NE, Ste. 1000
Albuquerque NM 87102-3400

(w/o Atch)
Mr. Will Moats
Hazardous Waste Bureau
121 Tijeras Dr. NE, Ste. 1000
Albuquerque NM 87102-3400

(w/ Atch)
Mr. Chuck Hendrickson
USEPA Region 6 (6PD-F)
1445 Ross Ave, Ste 1200
Dallas TX 75202-2750

Response to Comments
Final Nitrate Characterization Study Report
Holloman AFB, NM (NationView, January 2014)

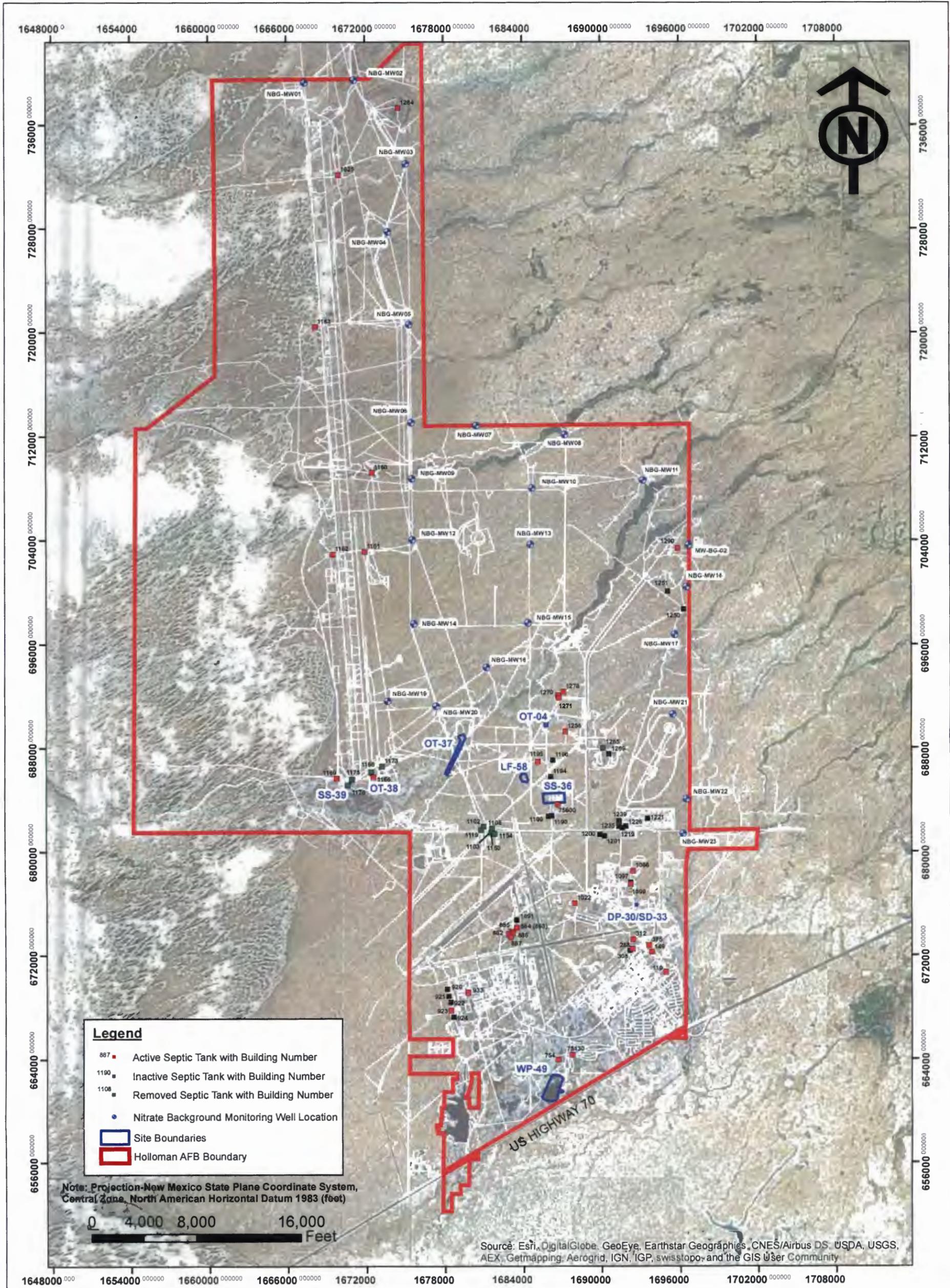
Comment No.	Section	Page	Comment	Response
Author	Mr. John Kieling , Chief Hazardous Waste Bureau, New Mexico Environment Department		Date of Comments: August 21, 2015	Date of Responses: October 7, 2015
1	Section 5 Nitrate Background Statistical Evaluation	Table 5-5	<p>As presented in Table 5-5 of the Report, the Permittee proposes that the background screening concentration for nitrate be set at 37.77 milligrams per liter (mg/L), which exceeds the New Mexico Water Quality Control Commission standard and the U.S. Environmental Protection Agency Maximum Contaminant Level for nitrate (both set at 10 mg/L). NMED cannot accept such a screening background concentration unless the Permittee demonstrates that it is based on water quality data that are representative of natural conditions. To assist with this demonstration, the Permittee must:</p> <ol style="list-style-type: none"> a. Collect groundwater samples at all 24 background monitoring wells (MWs) and analyze them for perchlorate. Appreciable concentrations of perchlorate in association with nitrate could suggest an anthropogenic source for both compounds. b. Collect groundwater samples at all 24 MWs and analyze them for stable isotopes of nitrogen and oxygen (specifically ¹⁵N/ ¹⁴N and ¹⁸O/ ¹⁶O). The data, in the form of $\delta^{15}\text{N}$ and $\delta^{18}\text{O}$, must be plotted on a graph similar to the one shown on Figure 1 (enclosed with this letter) to support interpretation of the data. 	<p>The collection of additional groundwater samples from the 24 background monitoring wells for perchlorate and the isotopes of nitrate and oxygen ($\delta^{15}\text{N}$ and $\delta^{18}\text{O}$) and revising the Report are beyond the scope of work presented in the NMED approved <i>Final Nitrate Characterization Study Work Plan HAFB, NM</i> (NationView, January 2012) therefore, the requested additional sampling cannot be obtained in this investigation. Completion of the additional sampling requested would require new programmatic funding which is not currently available.</p>

Response to Comments
Final Nitrate Characterization Study Report
Holloman AFB, NM (NationView, January 2014)

Comment No.	Section	Page	Comment	Response
Author	Mr. John Kieling, Chief Hazardous Waste Bureau, New Mexico Environment Department		Date of Comments: August 21, 2015	Date of Responses: October 7, 2015
2	Section 1.4		<p>In Section 1.4 of the Report, the Permittee states that "In addition, there are numerous active and inactive septic/leach field systems and sites used for sewage disposal (e.g. DP-30/SD-33 disposal pits), located throughout HAFB which may have also contributed anthropogenic releases of nitrogen compounds to the environment. However, sites/buildings which have septic/leach field systems or were used for sewage disposal areas are being investigated under separate contracts".</p> <p>The locations of active and inactive septic/leach field systems and sites used for sewage disposal are of paramount importance in conducting a background study for nitrate and other nitrogen-bearing compounds. All such features located throughout the Facility must be shown on a map in conjunction with the locations of the 24 MWs, along with any other sites where a nitrogen-bearing substance is known to have been or potentially was or is being released into the environment. The map must be included in the revised Report. NMED acknowledges that the locations of the septic systems were provided in a document submitted by the Permittee in 2007. However, these locations must be shown in the Report for future reference.</p>	<p>Concur. Attached is new Figure 7-1 which shows the locations of active, inactive and removed septic tank locations, potential Nitrate Source Area ERP Sites and the 24 Nitrate Study background monitoring wells. In addition, the new Table 7-1 (attached) presents the status and coordinates of all known Holloman AFB septic tanks.</p> <p>The following text will be added to Section 7 (after the 1st sentence, paragraph 1, page 7-1): "The locations of the active, inactive and removed septic tank locations, potential Nitrate Source Area ERP Sites and the locations of the 24 Nitrate Study background monitoring wells are shown on Figure 7-1. In addition, Table 7-1 presents the status of each septic tank and location coordinates. As shown on Figure 7-1 the Nitrate Study background monitoring wells are all located upgradient of known Nitrate Source Area ERP Sites and are not near active or inactive septic systems."</p>
3	Section 2.5.2.1	Figures 2-7 and 2-8	<p>Regarding source area OT-04 (see Figure 2-8), the direction of groundwater flow (shown as north-northeast on the figure) is opposite of that for the regional groundwater as shown on Figure 2-7. Additionally, the water table between wells MW-04-03 and MW-04-04 is essentially flat; whereas, it dips</p>	<p>Site OT-04 and the three monitoring wells (MW-04-02, MW-04-03 and MW-04-04) used to determine the local groundwater flow at the site are located on an escarpment that slopes to the north towards Ritas Draw (a tributary of the Lost River which is a gaining stream along this reach). As a</p>

Response to Comments
Final Nitrate Characterization Study Report
Holloman AFB, NM (NationView, January 2014)

Comment No.	Section	Page	Comment	Response
Author	Mr. John Kieling, Chief Hazardous Waste Bureau, New Mexico Environment Department		Date of Comments: August 21, 2015	Date of Responses: October 7, 2015
			steeply between wells MW-04-02 and MW-04-03. Furthermore, as shown on Table 2-3 of the Report, the water table elevation at well NSA04-MW01 (not used to construct Figure 2-8) is lower than that at well MW-04-02, suggesting groundwater flow to the south. Due to such unusual or conflicting data, the direction of groundwater flow at site OT-04 must be confirmed via the installation of additional wells, or through resurveying the existing wells and re-measuring the depth to water to check for errors in the reported water table elevations, or both. The Permittee must resurvey the wells at the site to verify the accuracy of the measuring points in order to establish, with reasonable confidence, the direction of groundwater flow at site OT-04. The results of this effort must be included in the revised Report, including any necessary corrections to Figure 2-8.	result the local groundwater flow direction at the site mimics the local topography and flows to the north towards Ritas Draw as shown on Figure 2-8. Furthermore, the OT-04 groundwater flow direction during the Remedial Investigation was also to the north using the same monitoring wells (see attached Figure 4-11, <i>Draft Final RI Report Investigation, Study and Recommendation for 29 Waste Sites Holloman AFB, NM</i> [Radian, 1992]). Note: The historical upgradient monitoring well MW-04-01 was abandoned prior to conducting the Nitrate Characterization Study and was replaced with NSA04-MW01 which is located approximately 1000 ft south of OT-04 and is located on the plateau above Ritas Draw, therefore the water level from this well is in line with the regional southerly groundwater flow direction at Holloman AFB.



Active, Inactive and Removed Septic Tank Location Map

Nitrate Characterization Study Report
Holloman AFB, New Mexico



PROJECT NO.	SCALE	DATE	DRAWN BY:
11-0017	1"=8000'	10/6/2015	cm
			DRAWING NO:
			Figure 7-1

Figure 7-1

Table 7-1
Septic Tank Status and Location Coordinates
 Nitrate Characterization Study Report
 Holloman AFB, New Mexico

Septic Tank Building Number	Northing NAD83 State Plane (ft)	Easting NAD83 State Plane (ft)	Status
110	670702.708	1694921.244	Active
149	672271.214	1693848.000	Active
288	672467.071	1692367.800	Active
312	673215.804	1692434.391	Active
375	672751.032	1693655.699	Active
754	663964.495	1686662.251	Active
882	673632.000	1682890.000	Active
864 (863)	674136.197	1683490.343	Active
885	673808.979	1683115.232	Active
886	673715.754	1683209.241	Active
887	673413.000	1683017.000	Active
923	667735.513	1678474.994	Active
933	669141.943	1679782.572	Active
1022	675986.531	1687947.180	Active
1066	678490.470	1692425.931	Active
1099	677463.974	1692245.046	Active
1160	709206.924	1672494.489	Active
1161	703121.446	1671914.273	Active
1162	702909.336	1669475.636	Active
1163	720438.267	1668170.803	Active
1166	685726.277	1672574.398	Active
1169	685641.000	1669773.000	Active
1195	686908.886	1685139.178	Active
1256	689259.648	1687242.416	Active
1270	692035.735	1686716.851	Active
1271	691860.851	1686752.283	Active
1278	692316.182	1687103.444	Active
1284	737294.000	1674532.000	Active
1290	703377.897	1695910.598	Active
1625	732148.000	1669960.000	Active
75130	664300.495	1687742.750	Active
75600	683603.836	1686658.525	Active
308	672355.000	1692179.000	Inactive
920	669385.000	1678201.000	Inactive
921	668859.000	1678320.000	Inactive
922	668388.927	1678450.752	Inactive
924	667245.352	1678686.854	Inactive
1091	674724.032	1683501.151	Inactive
1097	677585.000	1692250.000	Inactive
1190	682752.000	1686201.000	Inactive
1194	685749.000	1686129.000	Inactive
1196	687041.866	1686283.759	Inactive
1199	682693.000	1685958.000	Inactive
1200	681304.000	1689878.000	Inactive
1201	681176.000	1690228.000	Inactive
1219	681806.313	1691620.420	Inactive
1221	682521.000	1693543.000	Inactive
1226	681918.570	1691882.716	Inactive
1235	681931.503	1691367.506	Inactive
1239	682354.638	1691366.841	Inactive
1250	698684.700	1696356.960	Inactive
1251	700057.079	1695110.057	Inactive
1269	687533.000	1690598.000	Inactive
1102	681917.000	1680990.000	Removed
1103	681458.000	1681583.000	Removed
1108	681787.000	1681641.000	Removed
1119	681655.000	1680812.000	Removed
1150	681395.000	1681724.000	Removed
1154	681366.000	1681834.000	Removed
1166	686130.996	1672400.777	Removed
1175	685543.481	1670943.235	Removed
1176	685109.000	1670613.000	Removed
1265	687990.000	1690146.000	Removed
1173	686558.000	1673242.000	Removed

Notes:

NAD83 = North American Datum 1983 ft = feet

4-86

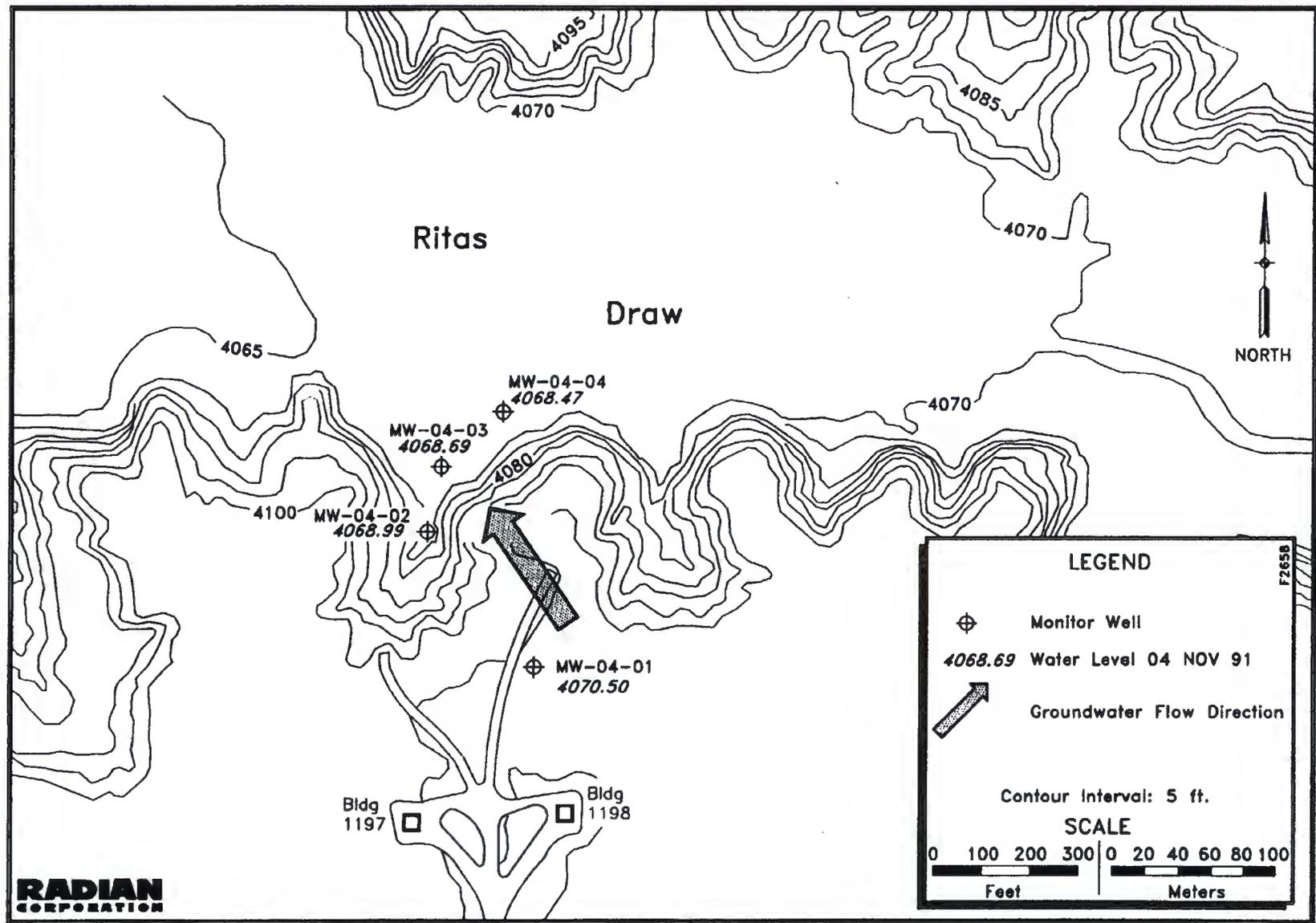


Figure 4-11. Monitor Well Locations and Groundwater Flow Direction for Site 4