

**Meeting Dates:** April 28-29, 2015

**Meeting Notes**

**Submittal Dates:** September 21, 2015 – Submitted to NDEP

**Place:** April 28 – NV Energy Reid Gardner Station, Moapa, Nevada  
April 29 – NV Energy Pearson Building, Las Vegas, Nevada

**Project/Purpose:** NV Energy - Reid Gardner Station  
Implementation of Administrative Order on Consent (AOC)  
Quarterly AOC Meeting and Site Visit

<b>Attendees:</b>	<u>4/28</u>	<u>4/29</u>	
	X	X	Alison Oakley/NDEP
	X	X	Brad Cross/ARCADIS U.S., Inc.
	X	X	John Kivett/ARCADIS U.S. Inc.
	X	X	Michael Shivell/ACADIS U.S. Inc.
	X	X	Julie Sueker/ACADIS U.S. Inc.
	X	X	David Hull/ARCADIS U.S., Inc.
	X	--	Ginger Somerville/ARCADIS U.S., Inc.
	--	X	Tony Garcia/ NV Energy
	X	X	Mike Rojo/NV Energy
	X	X	Jason Reed/NV Energy
	X	--	Ann Casey/NV Energy
	X	X	Scott Dethloff/CH2M Hill
	X	X	Mark Andersen/CDWR
	X	X	Peter Mesard/Exponent
	X	X	Joseph Scalia/ Exponent
	X	--	Todd Knause/Stanley Consultants ( <i>afternoon only</i> )
	X	X	Africa Espina/Stanley Consultants
	X	--	Jonathan Sarich/Stanley Consultants ( <i>morning only</i> )
	X	X	Bill Carrig/Stanley Consultants
	--	X	Julie Oriano/Stanley Consultants ( <i>via telephone petroleum-related topics only</i> )
	--	X	Becky Svatos/Stanley Consultants ( <i>via telephone afternoon only</i> )
	X	X	Brad Bessinger/S.S. Papadopoulos & Associates, Inc.

**Notes By:** Bill Carrig/Stanley Consultants

A meeting was held between NV Energy and Nevada Division of Environmental Protection (NDEP) representatives on April 28 and 29, 2015. Topics discussed during the meeting are summarized below.

## **April 28**

***Reid Gardner Station (Station) Site Tour*** – Meeting attendees participated in a site tour during the morning. The tour began at Pond 4A where solids removal activities had temporarily ceased and over half the solids had been removed. Soil cover was being applied at the time of the visit. The tour continued to Muddy River transect T4. NV Energy reported the river transect survey had been completed but a transducer had not been installed nor flows collected due to high water and because the September 2015 flooding in this area created more than one river channel. NDEP expressed concern that this was a critical location due to the transition zone between losing and gaining reaches of the river; NDEP suggested reevaluating access and flow measurement uncertainties. The tour continued to Pond 4C2 where solids removal had been completed. Contractors were preparing to start solids removal at the adjacent Pond 4C1. The group viewed nearby proposed well locations MW-25S/M and MW-26S/M which were still under water following the flood. NV Energy and CDWR stated they likely will build a ramp to access MW-25S/M because it is at the edge of the water. All parties discussed relocating MW-26S/M to a dry site, but a final location was not determined. The tour continued to the recently completed P-25S/M/D well cluster. P-25S was set as a flush mount well due to the shallow water table and well completion requirements. As an alternative, the parties discussed the option of constructing the shallow wells with submerged screens since this type of plume does not necessitate monitoring at the water table. The P-25S sonic core was viewed by the team. Finally, the team visited the sonic drilling activities at nearby P-26D.

***Field Work Schedule*** – NV Energy reported that the Muddy River Investigation Work Plan field work is progressing on schedule. River transect surveying was completed in February 2015 and the first round of quarterly Muddy River sampling occurred in March 2015. Beginning in early March 2015, two-inch diameter shallow wells were installed along the Muddy River with a hydraulic profiling tool (HPT). MW-18S had not yet been installed due to flooding in the area. Additional Geoprobe work was conducted at the Station during the week of April 20. The Geoprobe activities are complete for now; however, additional data will be collected at DP-MW-29 once the area in the middle of former Pond 4A is accessible. Other work to be completed in the near future includes HPT-MW-25 and HPT-MW-26 located west of the Unit 4 Ponds. NV Energy is still evaluating where HPT-MW-26 will be advanced due to accessibility issues. Additionally, the location first proposed for P-23 is too wet and may be moved to the berm shared by former Pond D and Pond E2.

Sonic drilling has also begun at the site and P-25 has been completed at former Pond F. Sonic drilling at P-26 began during the week of April 26 and is scheduled to continue through May 1. Drilling at P-27 may be delayed due to access issues. Sonic drilling activities are currently scheduled to continue through the end of June 2015.

Transducers were installed in mid-April and data logged to date will be downloaded on April 29. An additional download will occur in May 2015. Manual measurements will be taken concurrently. This will continue until early 2016 when 12 monthly monitoring events have been completed.

The first round of quarterly Muddy River sampling occurred in March 2015. The data collected from this event is currently being validated by a third party. Future quarterly events are scheduled for June, September and December 2015.

***Muddy River Investigation Data to Date*** –ARCADIS US briefly presented their initial review of the Muddy River data collected in March 2015 and focused on the presence or absence of concentration and temperature trends along the river and in the sediment. Data collected will continue to be provided to the NDEP in weekly reports.

***HPT and Geoprobe Results to Date*** – Results collected to date include HPT logs, and both field and laboratory Total Dissolved Solids (TDS) data and electrical conductivity (EC) data. Discussions centered on the HPT logs and the evidence of transmissive zones within the vertical profile which should be considered when selecting well screen locations. The addition of a few, strategically placed wells in the Muddy Creek Formation was also discussed. ARCADIS presented a preliminary evaluation of HPT logs that indicated lateral continuity of some transmissive zones.

***Screened Intervals for Remaining Wells*** - NV Energy shared proposed well screen intervals for MW-21M, MW-27M, and MW-27D. MW-21M will be screened in a transmissive zone less than 50 feet below ground surface (bgs). The MW-27D screen will be set at 80-90 feet bgs. The MW-27M well will either be screened from 44-54 feet or from 68-78 feet bgs. The “shallow,” “deep” and “medium” naming conventions for wells at the site may need to be revisited to accommodate the possibility of multiple wells set within the zones and to reflect a better understanding of the subsurface geology.

***Data Management and Reporting*** - Data collected to date has been reported to the NDEP in weekly reports. ARCADIS US and the NDEP had the following comments on data reported thus far:

- Include mile markers on the flow balance diagram to indicate the relative lengths of the different Muddy River reaches.
- Include a different color in the water balance diagram to indicate if the Muddy River’s gaining/losing status is uncertain in a reach.
- Include T-4 survey data in the field parameter cross sections even though no field parameters were collected.

***NDEP April 14 Comments on Draft Pond Area Work Plans*** - NDEP’s comments dated April 14, 2015 were discussed. NV Energy will revise the work plans based on these comments and provide them to NDEP.

- Action Item: NV Energy to provide NDEP with revised Pond Area Work Plans.

***Constituents of Concern (COC) Letter:*** On April 22, 2015, NV Energy submitted a letter to NDEP requesting approval for 12 indicator COCs for the AOC. The addition of sodium and chloride to the parameter list was discussed. NDEP will provide a written response in the near future.

## **April 29**

***Draft Preliminary Geochemical Conceptual Site Model (CSM) Report*** – NDEP provided preliminary comments on the March 2015 draft report. These comments were discussed and written comments will be provided to NV Energy.

- **Action Item:** NDEP to provide written comments on the Draft Preliminary Geochemical Conceptual Site Model Report.

***Proposed Pond Solids Sampling for Geochemical Characterization:*** On April 27, 2015, NV Energy submitted a letter to NDEP proposing solids sampling in Ponds 4C-1, Former Pond 4A, and Pond E2 to support the geochemical CSM. NDEP will provide a written response to NV Energy.

- **Action Item:** NDEP to provide written response to the proposed pond solids sampling for geochemical characterization.

***Petroleum Source Areas:*** The Laser-Induced Fluorescence (LIF) Report was submitted to NDEP in March 2015. NDEP has begun reviewing the report and does not anticipate there will be many comments because the report is primarily a presentation of the data collected, with little interpretation. NV Energy will use this data to guide work plan development for petroleum source areas, including the development of a Light Non-Aqueous Phase Liquid (LNAPL) CSM. This topic will be discussed in more detail in a separate meeting between NV Energy and NDEP on April 30, 2015.

***Site-Wide CSM:*** Rather than preparing a CSM report in 2015, NV Energy and NDEP will have a CSM workshop in December 2015. NV Energy is collecting, tabulating, and evaluating a large amount of soil, groundwater and surface water data in 2015. By the end of 2015, enough data will have been collected to make significant progress on the CSM and a working hypothesis for the site's surface and subsurface sources, pathways and receptors. During the December 2015 CSM workshop, the data collected to date will be reviewed and discussed to facilitate AOC decision-making. Items being considered for discussion at the CSM workshop include:

- New and updated fence diagrams using sonic and HPT data as well as TDS data. NDEP suggested waiting to propose fence diagram locations until more data is collected; this will be discussed in June during a GoToMeeting.
- Isopach analyses and/or other mapping of specific geologic units such as the Muddy Creek Formation and any highly transmissive units.
- Groundwater concentration contour maps based on the third quarter groundwater sampling that will include data from the newly installed wells. NDEP requested that the background wells (wells BG-1 through BG-6) also be sampled during the third quarter and the data included in these contour maps.
- Muddy River water balance and TDS balance along with other lines of evidence related to identifying losing and gaining sections of the Muddy River.

- Water signatures (e.g., Station, Ranch, Muddy River, or naturally occurring groundwater)
- Surface salt signatures
- Stiff diagrams
- Vertical groundwater gradients
- Groundwater density data
- Station Area LNAPL plume identified by the LIF investigations

NV Energy proposed to postpone revisions to the Closure Plan until after the CSM has been better defined using the data collected in 2015. NDEP asked NV Energy to summarize this request in writing so they can respond formally.

Potential impacts to the Muddy River from the Station Area currently represent a data gap that could be addressed by groundwater sampling north of the Muddy River in the area of the coal piles. NV Energy currently plans to address this data gap in a future Coal Piles (SA-4) source area characterization work plan, but the newly-installed piezometers north of the river may allow for limited groundwater sampling if they produce enough water. NDEP would like a better understanding of the source of the flow to the river that is referred to as the South Gate Spring. NV Energy will include an evaluation of the source of this water in the Unit 4 Cooling Tower (SA-2) source area work plan. NDEP requested copies of available historical aerial photographs in this area.

- Action Item: NV Energy to include background wells in third quarter groundwater sampling event.
- Action Item: NV Energy to evaluate the potential for limited groundwater sampling of piezometers located north of the Muddy River and south of the Unit 4 coal pile.
- Action Item: NV Energy to provide NDEP with historical aerial photographs of the South Gate Spring area. This was completed on July 14, 2015
- Action Item: NV Energy to submit e-mail request to NDEP to postpone Closure Plan revisions until 2016. (NV Energy e-mail sent to NDEP on 4-30-15 and NDEP approved on 7-9-15)

***Groundwater Monitoring Report:*** The 2014 Annual Groundwater Monitoring Report (GMR) was submitted to NDEP in January 2015. The report format and contents were discussed. NDEP requested that first quarter groundwater elevation contour map be included along with tables of first quarter data and a paragraph evaluating differences between the first and third quarters. NV Energy will provide NDEP a pdf of the full GMR report, including the CD, for the website.

- Action Item: NV Energy to revise 2014 Annual GMR based on NDEP comments.

***Pond 4A/C1/C2/E2 Solids Removal Progress and Schedule:*** NV Energy reported that solids removal was temporarily halted in former Pond 4A, started in Pond 4C1, and completed in Pond 4C2 on April 28, 2015. Pond E2 solids removal will commence in May 2015.

***Pond B1, B2, B3, and E1 Solids Removal Schedule:*** NV Energy reported that a lined landfill cell will be constructed for these solids in the future. NV Energy also stated that the removal of ash from SA-18, the former ASP area, may be accelerated if more ash is needed for better compaction and management of the pond solids in the landfill. No process water will be discharged to Pond E1 or the B Ponds after mid-October 2015; all four of these ponds will be closed and the solids removed by the end of 2017 with consideration to the new federal Coal Combustion Residuals (CCR) rule requirements.

***Investigation Complete Letters for PA-8, SA-12 and SA-17:*** NV Energy reported that these letters are being drafted and will be submitted to NDEP for review.

***Status of Decommissioning and Demolition:*** NV Energy reported that a contractor has been selected for early demolition of select buildings and foundations. This work is expected to begin soon and dewatering activities are not expected. The overall demolition contractor should be selected in July and mobilization is scheduled to occur in September. After utilities are disconnected in October, and the demolition activities begin in earnest, the demolition areas will have restricted access. Activities in these areas need to be accelerated so they are completed before access is restricted. This will be discussed in more detail during a separate meeting with NDEP on April 30, 2015.

The approach for handling release reporting during demolition and decommissioning was discussed. NV Energy should follow all spill reporting requirements each time a reportable release is discovered. Releases may be handled outside the AOC if they are small and easily addressed; others would be addressed under the AOC.

***Status of August, October and December 2014 Meeting Minutes:*** NDEP reported that comments and/or concurrence on the August, October and December 2014 meeting minutes will be issued in the near future.

- Action Item: NDEP to provide meeting minute comments.

***Next Scheduled Meetings*** – The following meetings were scheduled:

- *July 15, 2015:* GoToMeeting to provide update on AOC activities.
- *September 16, 2015:* Quarterly AOC meeting in Las Vegas.
- *December 15-16, 2015:* CSM Workshop in Moapa and/or Las Vegas.

NDEP ACTION ITEMS (as of April 29, 2015)				
Priority	Deliverable	Submittal Date	Party Responsible	Notes
1	Letter requesting concurrence on the identification of indicator constituents of concern parameters	4-22-15	NV Energy/Stanley Consultants	NDEP provided concurrence on June 6, 2015
2	Laser Induced Fluorescence (LIF) Report	3-10-15	NDEP/ARCADIS	NDEP provided concurrence on May 13, 2015
3	Preliminary Geochemical CSM Report	3-5-15	NDEP/ARCADIS	NDEP to revise draft comments based on discussions held during the AOC meeting on April 29, 2015.
4	Meeting Minutes from August 18, 2014, Quarterly AOC Meeting	12-29-14	NDEP/ARCADIS	NDEP provided concurrence on May 5, 2015
5	Meeting Minutes from October 7-8, 2014, Meeting/Workshop	1-15-15	NDEP/ARCADIS	NDEP provided concurrence on May 5, 2015
6	Meeting Minutes from December 11, 2014, Meeting/Workshop	1-16-15	NDEP/ARCADIS	NDEP provided concurrence on May 5, 2015
7	Meeting Minutes from March 4, 2015 Quarterly AOC Meeting (GoToMeeting)	4-3-15	NV Energy/Stanley Consultants	NDEP provided concurrence on June 24, 2015
NEAR TERM DELIVERABLES TO BE SUBMITTED TO THE NDEP				
Deliverable	Estimated Delivery Date	Party Responsible	Notes	
Final Pond E2 Solids Removal Work Plan	May 2015	NV Energy/Stanley Consultants	Final cover sheets and pdf of final document provided on May 5, 2015	
Pond 4A Solids Data and Validation Reports	May 2015	NV Energy/Stanley Consultants	Submitted to the NDEP on June 24, 2015	
Provide a Memo summarizing Muddy River Water Quality in the area of the Reid Gardner Station	May 2015	NV Energy/Stanley Consultants	Currently being drafted and currently planned to be submitted during the third quarter 2015.	
Provide NDEP with revised Pond Area Work Plans for PA-2 based on NDEP comments dated April 14, 2015.	May 2015	NV Energy/Stanley Consultants	Currently being drafted and currently planned to be submitted during the third quarter 2015.	
Provide NDEP with revised Pond Area Work Plans for PA-3 based on NDEP comments dated April 14, 2015.	May 2015	NV Energy/Stanley Consultants	Currently being drafted and currently planned to be submitted during the third quarter 2015.	
Provide NDEP with revised Pond Area Work Plans for PA-5-7 based on NDEP comments dated April 14, 2015.	May 2015	NV Energy/Stanley Consultants	Currently being drafted and currently planned to be submitted during the third quarter 2015.	
NV Energy to provide NDEP with historical aerial photographs of the South Gate Spring area.	No Date Set	NV Energy/Stanley Consultants	Aerial photographs provided to NDEP on July 14, 2015.	
Peroxide Tank Release (PA-8) request for No Further Action (NFA) status	Q2 2015	NV Energy/Stanley Consultants	This has been pushed back due to other priorities and are currently planned to be submitted during the third quarter 2015.	
Former Diesel AST (SA-12) request for Investigation Closed (IC) status	Q2 2015	NV Energy/Stanley Consultants	This has been pushed back due to other priorities and are currently planned to be submitted during the third quarter 2015.	
WMU 8 Previous Disposal Area (SA-17) request for IC status	Q2 2015	NV Energy/Stanley Consultants	This has been pushed back due to other priorities and are currently planned to be submitted during the third quarter 2015.	
Revised Annual GMR from 2014	Q3 2015	NV Energy/Stanley Consultants	GMR to be revised based on input from NDEP	

NDEP ACTION ITEMS (as of April 29, 2015)			
Petroleum Source Area Work Plans to further characterize soil and/or groundwater: - Former Units 1,2,3 Lube Oil Rack (SA-10) - Former Gasoline UST (1,000-gallon) and Warehouse 1 (SA-11) - Former Diesel Fuel Unloading Area (SA-13) - Free Product Recovery System (SA-15) - Vehicle Maintenance Area (SA-16)	-	NV Energy/CH2M HILL	Field work to start in Q3 or Q4 2015
Units 1,2,3 Coal Pile (SA-4) Work Plan to further characterize soil and/or groundwater	Q3 2015	NV Energy/Stanley Consultants	Field work to start in Q3 or Q4 2015
ASP-1, ASP-2, ASP-3, Former Clear Wells, Former Fly Ash Disposal Area (WMU-11) (SA-18) Work Plan to further characterize soil and/or groundwater	Q3 2015	NV Energy/Stanley Consultants	Field work to start in Q3 or Q4 2015
Revised/additional Station geologic fence diagrams	Q4 2015	NV Energy/Stanley Consultants	
Mesa Groundwater Evaluation Approach Memo	ON HOLD	NV Energy/Stanley Consultants	
Draft revised Closure Plan	2016	NV Energy/Stanley Consultants	NDEP approved delaying the Closure Plan until 2016 after additional data has been collected in 2015.

**NV Energy – Reid Gardner Station  
Implementation of Administrative Order on Consent  
Quarterly AOC Meeting and Site Visit  
April 28-29, 2015  
List of Attendees**

<b>Name</b>	<b>Representing</b>	<b>Phone</b>	<b>E-Mail</b>
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