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## NEIL C. NOWAK, P.E.

### Education

BS, Civil/Forest Engineering, State University of New York – College of Environmental Science and Forestry in conjunction with Syracuse University, 1986

### Professional Licenses

Professional Engineer in Colorado, Montana, New Mexico, Nevada, North Dakota, Oklahoma, South Dakota, Texas, Utah, Wyoming ,

### Professional Affiliations

Produced Water Society

Solid Waste Association of North America (SWANA) since 1991

Member of the Board of Directors – Colorado Chapter since 2006

### Professional Experience

Mr. Nowak has over 30 years of experience in the consulting engineering industry, including civil, solid waste, produced water impoundments, storm water engineering, and construction projects. Expertise includes project management, building client relationships, managing budgets and schedules, building and guiding successful teams, and effectively utilizing project resources. His experience includes several front-range and mountainous landfills in Colorado and in other states as described below.

Engineering experience includes design of landfill cap and baseliner systems, landfill gas collection and migration systems, produced wastewater evaporation ponds, SPCC Plans, storm water controls, geotechnical and geosynthetic applications, grading plans, environmental monitoring programs, construction certification, mold investigation, aerial photography, and land surveying.

Construction quality assurance experience includes landfill baseliners and caps, oil and gas waste landfills, produced water evaporative ponds, demolition of underground storage tanks, lining of storm water channels, establishment of wetlands, and restoration of disturbed areas with indigenous species of vegetation.

Mr. Nowak has managed environmental compliance and landfill construction quality assurance activities for multiple sites in several states. He has attended numerous public comment meetings and county commissioner meetings where he has prepared and presented various levels of project details for review and approval.

Professional experience includes serving on the Board of Directors for the Colorado Chapter of SWANA since 2006. He has worked closely with various local, state, and federal regulatory agencies to ensure that engineering deliverables comply with all current applicable requirements.

Example project experience includes:

**Bluegrass Water Wright Facility, Wright, Wyoming – Bluegrass Water, LLC:** Mr. Nowak serves as the Project Director in charge of the creation and completion of the permit documents, construction design, construction plans, construction specifications, financial assurance, closure

plan, and the construction quality assurance (CQA) of Ponds 1-4 and the certification of the construction to WDEQ. The facility permit consists of five - eight acre double lined high density polyethylene (HDPE) impoundments all with leak detection used for evaporation of produced/flowback water from the oil and gas industry in the area. The Wyoming Department of Environmental Quality, Water Quality Division approved the permit and construction.

**Southern Cross Facility, Dad, Wyoming:** Mr. Nowak serves as the Project Director in charge of the project that has included or now includes the site investigation, geologic drilling, topographic mapping, permit design and report, construction design, construction plans, construction specifications, financial assurance, closure plan, QA/QC Plan, storm water plan, surface water appropriations permit, groundwater supply well, construction documentation report and certification, and air permit. The facility permit consists of eight - five acre double lined high density polyethylene (HDPE) impoundments all with leak detection used for evaporation of produced/flowback water from the oil and gas industry in the area. The Wyoming Department of Environmental Quality, Water Quality Division approved the permit and construction.

**Black Tea Oil, Logan/Gover County Kansas:** Professional Engineer of record, and signed/sealed the all-encompassing SPCC Plan for 20 sites from the individual plans, owned by Black Tea Oil and managed the site visits to inspect and record site conditions, and accuracy of individual SPCC Plans compared to tanks and secondary containment present on-site.

**Magellan Petroleum Corporation, Poplar Oilwell Fields:** Professional Engineer of record, and signed/sealed the SPCC Plan for 18 tank batteries, which included facility drawings, operation information, inspection records, containment calculations, and control measures. Managed the site inspections and reporting of the conditions for inclusion in the final SPCC Plan.

**Silo Field Facility, Cheyenne, Wyoming – R360 Environmental Solutions:** Mr. Nowak served as the Senior Project Manager in charge of the site investigation, geologic drilling, topographic mapping, permit design and report, construction design, construction plans, construction specifications, financial assurance, closure plan, QA/QC Plan, storm water plan, surface water appropriations permit, groundwater supply well, construction documentation report and certification, and air permit. The facility permit consists of 10 - five acre double lined high density polyethylene (HDPE) impoundments all with leak detection used for evaporation of produced/flowback water from the oil and gas industry in the area. The Wyoming Department of Environmental Quality, Water Quality Division approved the permit and construction.

**Wishbone Facility, Catarina, Texas – R360 Environmental Solutions:** Mr. Nowak served as the Senior Project Manager in charge of the topographic mapping, permit design and report, construction design, construction plans, construction specifications, financial assurance, closure plan, QA/QC Plan, storm water plan, construction documentation report and certification. The facility permit consists of two - seven acre double lined high density polyethylene (HDPE) impoundments used for evaporation of produced/flowback water and 10 – five acre landfill disposal cells all with leak detection to dispose of solid wastes from the oil and gas industry in the area. The Railroad Commission of Texas approved the permit and construction.

**Eagle Ford West Facility, Stanton, Texas – R360 Environmental Solutions:** Mr. Nowak served as the Senior Project Manager in charge of the topographic mapping, permit design and report, construction design, construction plans, construction specifications, financial assurance, closure plan, QA/QC Plan, storm water plan, construction documentation report and

certification. The facility permit consists of one - six acre double lined high density polyethylene (HDPE) impoundment used for evaporation of produced/flowback water and five – five acre landfill disposal cells all with leak detection to dispose of solid wastes from the oil and gas industry in the area. The Railroad Commission of Texas approved the permit and construction.

**Danish Flats Facility, Cisco, Utah:** Mr. Nowak served as the Senior Project Manager in charge of the site investigation, geologic drilling, topographic mapping, permit design and report, construction design, construction plans, construction specifications, financial assurance, closure plan, QA/QC Plan, storm water plan, construction documentation report and certification, and air permit. The facility permit consists of 20 - five acre single lined high density polyethylene (HDPE) impoundments with leak detection used for evaporation of produced/flowback water from the oil and gas industry in the area. The Utah Department of Natural Resource, Water Quality Division approved the permit and construction.

**Summit County Resource Allocation Park (SCRAP), Dillon, Colorado:** Mr. Nowak currently serves as the Project Director for SCS Engineers on the engineering and environmental projects at the Summit County Resource Allocation Park (SCRAP), including groundwater monitoring, transition from previous consultant, revision of the engineering and design plan, air quality permitting, and miscellaneous engineering tasks. Previously, he served as the Senior Project Manager in charge of the storm water compliance, design and permitting of the on-site compost area at the landfill, new disposal cell construction start-up of Cell 4A. On hand experience and familiarity with site conditions.

**Edgemere Landfill, Queens, New York – City of New York Department of Sanitation:** Mr. Nowak served as the Project Manager in charge of the landfill cap permit design, construction plans, specifications, cost estimate, USACOE wetlands remediation, storm water design, barge off-loading facility subcontractor design, construction support by design engineer during construction, and landfill gas control, piping and flare design. The project cost for the permitting, design, and construction was \$45 million. He attended the public presentation meetings, where the local community was highly vocal, and worked together with the NYCDOS and the community to complete the project to the satisfaction of the parties involved.

**Fresh Kills Landfill, Staten Island, New York – City of New York Department of Sanitation:** Mr. Nowak served as the Project Manager in charge of the landfill gas migration monitoring at the 2,500 acre solid waste facility.

**Expert Testimony – Landfill Gas Migration, Oceanside Landfill, Hempstead, New York:** Mr. Nowak was retained and deemed to be an expert to provide testimony regarding landfill gas migration at an existing landfill, including deposition and document review related to landfill gas, and topography interpretation.

**South Canyon Landfill, Glenwood Springs, Colorado:** Mr. Nowak has served as the Senior Engineer for engineering projects at the facility. Previously, he served as the Senior Project Manager in charge of the storm water compliance; design of, construction quality assurance and certification of the old landfill cut-off trench and leachate holding impoundment, expansion area geologic investigation and new groundwater well installations for establishment of baseline water quality in the expansion area. On hand experience and familiarity with site conditions.

**Milner Landfill, Milner, Colorado:** Mr. Nowak served as the Senior Project Manager in charge of the storm water compliance, permit finalization, including coordinating geologic investigation of underground coal mine below landfill, construction quality assurance and certification of one lined landfill cell, and construction quality assurance of the solidification basin. On hand experience and familiarity with site conditions. Presented to the Routt County commissioners proposed permit modifications where the county approved the design and granted the Certification of Designation be modified as offered.

**Moffat County Landfill, Craig, Colorado:** Mr. Nowak served as the Senior Project Manager in charge of the site, including compliance with groundwater monitoring and reporting, landfill gas migration monitoring and reporting, and other on-site compliance issues.

**Gunnison County Landfill, Gunnison, Colorado:** Mr. Nowak served as the Senior Project Manager in charge of the storm water compliance and design/construction of a new storm water control basin. On hand experience and familiarity with site conditions.

**Denver Arapahoe Disposal Site (DADS), Aurora, Colorado:** Mr. Nowak served as the Project Director in charge of the vegetative assessments performed on the final covered areas at the facility in 2014 and 2015 for Waste Management of Colorado.

**North Weld Landfill, Ault, Colorado:** Mr. Nowak served as the Project Director in charge of the vegetative assessments performed on the final covered areas at the facility in 2014 and 2015 for Waste Management of Colorado.

**Conservation Services Inc. Landfill, Bennett, Colorado:** Mr. Nowak served as the Project Director in charge of the vegetative assessments performed on the final covered areas at the facility in 2014 and 2015 for Waste Management of Colorado.

**Colorado Springs Landfill, Colorado Springs, Colorado:** Mr. Nowak served as the Project Director in charge of the vegetative assessments performed on the final covered areas at the facility in 2014 and 2015 for Waste Management of Colorado.

**Midway Landfill, Pueblo, Colorado:** Mr. Nowak served as the Project Director in charge of the vegetative assessments performed on the final covered areas at the facility in 2014 and 2015 for Waste Management of Colorado.

**Summit County Resource Allocation Park (SCRAP), Dillon, Colorado** – Managed the SPCC Plan inspection for all oil storage containers where the condition of the tanks, secondary containment, and prevention systems were documented and incorporated into the plan. Professional Engineer of record, and signed/sealed the SPCC plan including facility drawings, operational information, and inspection records.

**Hanford Facility:** Managed the Design Analysis Variance Report (DAVR) for the Environmental Restoration Disposal Facility (ERDF) Cells 9 and 10 at the Department of Energy's (DOE) Hanford Facility in the eastern area of the State of Washington. Also, Neil provided quality assurance review of the technical specifications for this project.

**Presentations/Papers**

*HDPE Lined Produced Water Evaporation Ponds*, Geosynthetics 2009, Salt Lake City, Utah, February 2009, Geosynthetics 2013, Long Beach, California, April 2013, and Geosynthetics 2015, Portland, Oregon, February 2015.

*HDPE Lined Produced Water Evaporation Ponds*, 2010 Energy Resources Produced Water Conference, University of Wyoming, Laramie, Wyoming, May 2010.

*HDPE Lined Produced Water Evaporation Ponds*, 17<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> International Petroleum Environmental Conference (IPEC), San Antonio, Texas, August 2010, Houston, Texas, November 2011, Denver, Colorado, October 2012, Houston, Texas, October 2014, October 2015 Denver, Colorado, and New Orleans, Louisiana, November 2016.

*HDPE Lined Produced Water Evaporation Ponds*, 21<sup>st</sup>, 22<sup>nd</sup>, 23<sup>rd</sup> and 25<sup>th</sup> Annual Produced Water Seminar, Houston, Texas, January 2011, January 2012, January 2013 and January 2015.

*HDPE Lined Produced Water Evaporation Ponds*, Global Waste Symposium, Phoenix, Arizona, October 2012 (poster session), and Palm Springs, California, February 2016 (presentation).

*HDPE Lined Produced Water Evaporation Ponds*, International Mine Water Association Annual Conference-Reliable Mine Water Technology, Golden, Colorado, August 2013.

*The Role of HDPE Lined Ponds in Treating Water for the Oil and Gas Industry*, Oil, Gas and Mining Magazine, March 2014.

*HDPE Lined Produced Water Evaporation Ponds*, Shale Water Expo, Houston, Texas, October 2015.