



September 8, 2014

Dear Collier County Commissioners:

The Conservancy of Southwest has and is working diligently to support the County's efforts to obtain meaningful assessment by the Florida Department of Environmental Protection (DEP) and remediation by Dan A. Hughes. We had requested the opportunity to make a public petition or presentation to the County Commissioners tomorrow, but being unable to do so, we hope you will have the opportunity to review the following prior to tomorrow's Commission meeting. The following is to brief you on a proposal we understand DEP will likely be presenting to you then.

County was right to seek Assessment and Remediation *in addition to* Revocation

- BOCC had expressed support and the County's petition outlined that assessment (groundwater modeling and monitoring, tracer studies, mechanical integrity tests etc.) should be done by neutral independent third party hired by the DEP. Therefore, assessment should not be performed by consultants hired by Dan A. Hughes or Collier Resources/Barron Collier who have a direct financial interest in this matter. Barron Collier however is currently conducting groundwater modeling, which is inconsistent with assessment being done by a truly independent third party.
 - *We respectfully request the County to continue to insist DEP be responsible for conducting assessment (seeking reimbursement of their expenses from Hughes), and Hughes to be responsible for conducting remediation as County has sought in its petition.*
- The attached flowchart indicates the phased assessment needed to properly investigate the Hughes Hogan well violation and its potential impact on Collier County drinking water supplies, which reflects assessing the 3 core issues in the County's petition.
 - (1) The Hogan well itself and whether it was compromised.

Assessment for this is a deep groundwater monitoring well (approx. 1850' deep to bottom of the Underground Source of Drinking Water (USDW)) downgradient of the Hogan well (or alternately.
 - (2) The improperly plugged dry bore holes 86 and 103 and whether they could or did act as a contamination vehicle to the Underground Source of Drinking Water (USDW).

Assessment for this is sampling, plugging and abandoning of wells 86 and 103 to current plugging regulatory requirements.
 - (3) The flowback wastewater and whether it was all properly disposed of.

Assessment for this is investigation of records to determine where and how disposed of in relation to legal requirements – specifically in reference to the nearly half million gallons of flowback from the unauthorized fracking activity that were produced but are not reflected as being transported out of Collier county.
- Bore holes 86 and 103 are not plugged per current legal requirements to protect the USDW from groundwater contamination.
 - The attached diagrams illustrate both the original plugging in 40's and intended replugging of these wells in 50s, where in both cases the records indicate that several critical plugs and caps

required under current Florida law are absent, including the ½ inch thick steel cap at surface, 100 foot surface plug, and 400 foot plug at bottom of the USDW. These caps and plugs are vital to protecting the USDW from surface spills and also upward migration of saltwater and contaminants from underneath the USDW.

A Proposal to Get Meaningful Assessment and Remediation

- The DEP has indicated to the Conservancy that they would now be willing to voluntarily provide the meaningful assessment and remediation that Collier County and the Conservancy are seeking including
 - (1) a deeper groundwater monitoring well to below the USDW at 1850' deep, *Dove*
 - (2) a commitment to provide resources to sample, as well as properly plug and abandon bore holes 86 and 103 to current legal regulatory standards if their third party independent consultant indicates it would be beneficial to protecting the USDW to do so, and
 - (3) a commitment to investigate and address the potential inappropriate disposal of the polluted flowback wastewater from the well.
- In return for providing a legally binding commitment to fulfill these assessment and remediation actions, the DEP would be seeking the County and Conservancy to withdraw our respective petitions on this matter.
- The Conservancy has not verbally - nor in writing - agreed to this proposal. The Conservancy had tried to gather information about the proposed terms from DEP in writing. We have kept the County Attorney abreast on this throughout. There is no final draft written proposal at this time so we currently are uncertain of the exact terms of what DEP will be presenting tomorrow. We will be attending DEP's presentation and plan to make comment accordingly during general public comment tomorrow afternoon.
- It is imperative that the County obtain legal commitments that DEP will assess and address all 3 primary methods of potential contamination: from the well itself, bore holes, and flowback. It will also be critical to ensure that the language in the legal document is explicit and comprehensive to ensure that there are measurable enforceable timelines for how and when those commitments will be fulfilled, and that each of the three cores issues (well, bore holes and flowback) are all sufficiently addressed.
 - *If the County is interested in exploring this option, the Conservancy respectfully requests the County to work closely with Conservancy legal and technical experts to create strong legally binding language that is mutually acceptable in satisfying the respective concerns outlined in our petitions.*
- The Conservancy is working to support the best interests of Collier County and its citizens. If the County is inclined to accept the proposal, the Conservancy would do so (provided that our concerns outlined in our petition are satisfactorily addressed as well) in order to support the County's ability to obtain these additional DEP assessment and enforcement actions.
 - *We respectfully requests that the County not withdraw its petition until such time it enters into a legal agreement with DEP that DEP will undertake the meaningful assessment and enforcement the County and the Conservancy sought in our respective petitions such as outlined in the proposal (specifically the 1850' deep groundwater well, commitment to sample, as well as properly plug and abandon bore holes 86 and 103 to current legal regulatory standards if their third party independent consultant indicates it would be beneficial to protecting the USDW to do so and a commitment to investigate and address the potential inappropriate disposal of the polluted flowback wastewater from the well).*

The Big Picture: Better Regulation of Future Oil Drilling

- How the Hogan well violation is handled will set a precedent on how future oil permitting and enforcement will be handled.
- Multiple environmental organizations (including the Conservancy) are working on legislation to ensure that future oil drilling activities are brought under greater legal and regulatory control so there is more transparency and accountability by the landowners and oil companies involved.
- However, it is vitally important that the Hogan violation be handled properly to ensure that an appropriate example and expectations are set for future oil activity in Collier County and throughout the state.
 - *We respectfully request that the County allow it to make a presentation at an upcoming County Commission meeting on broader oil exploration and drilling issues to brief the Board on other projects, legislation, and local regulatory options to greater protect Collier's natural resources and citizens in light of expanded oil activities in Collier County, including extreme extraction techniques.*

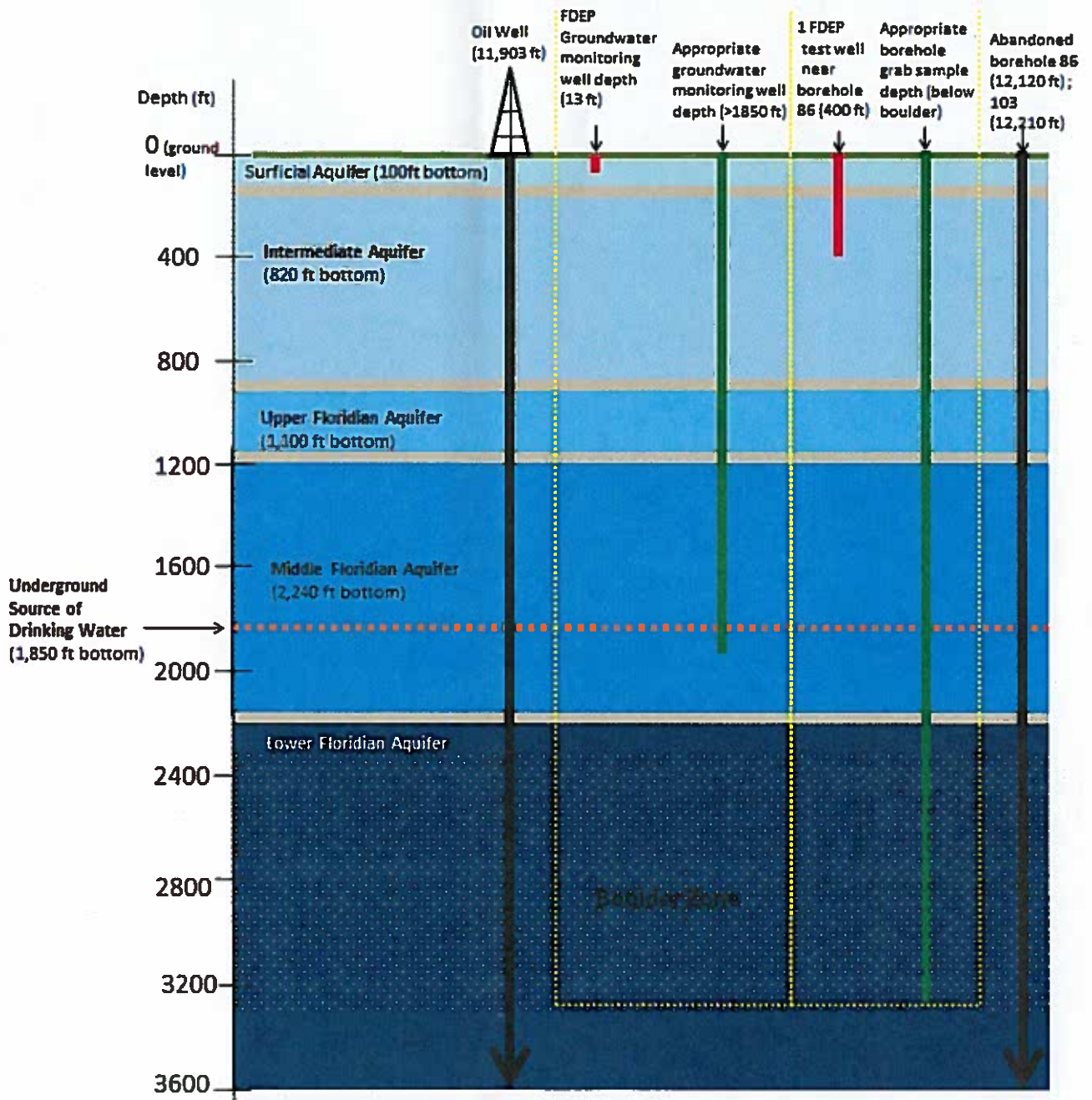
let's address this -

Only truly independent third parties should be used to consult on oil drilling activities in Collier – not consulting firms tied to oil companies or landowners who have direct financial interests.

- We are concerned with Item 16.K.2. on the Consent Order "Recommendation to approve a Work Order under Contract No. 13-6164, Professional Services: Architect and Engineering, to AECOM Technical Services, Inc., to provide technical and consulting services associated with identifying environmental impacts resulting from the oil exploration/production industry in Collier County, Florida and approve all necessary FY2015 budget amendments". This proposes for AECOM to be retained to provide consulting services to the County on oil. Has the County assessed if AECOM has worked for any landowners or oil companies involved to determine if there is any conflict of interest for the County to retain them for this purpose?
 - *We respectfully request the County to pull this from the consent agenda and to discuss and determine if the County has analyzed whether AECOM has worked with any of landowners or oil companies that this contract is aimed at evaluating to determine whether there is any conflict of interest in hiring them to fulfill this service.*
- We have also been informed that the County is working with the landowner of the surface and mineral rights at the Hogan well site to conduct groundwater testing. Just as the County had indicated that it was inappropriate for DEP to allow Dan A Hughes and their consultants to conduct groundwater testing in the consent order, so it is also inappropriate for the landowner who also has a direct financial interest in this matter to conduct that testing.
 - *We respectfully request that you continue to pursue truly independent and appropriate groundwater testing to be conducted by the DEP or its consultants which would involve testing below the designated Underground Source of Drinking Water (USDW) at 1850 foot depth in order to detect any potential contamination before it rises into the USDW.*

While revocation is important to stopping ongoing violations, this is the County's opportunity to obtain the necessary assessment and remediation to address the unauthorized fracking-like activity undertaken by Hughes. If the County withdraws without obtaining these vital assessment commitments from DEP, the public will never have assurance that Collier drinking water has not been contaminated nor that the bore holes do not continue to pose a risk to our drinking water sources – especially important since revocation of Hughes' permits are under challenge and Hughes may successfully regain the ability to produce there regardless of County's actions in this matter. Therefore, we support the County pursuing gaining these commitments from DEP.

APPROPRIATE GROUNDWATER MONITORING VS. CURRENT FDEP GROUNDWATER MONITORING



Aquifer depths are estimated based on: Bennet M, (2004). Hydrogeologic Investigation of the Floridan Aquifer System: Big Cypress Preserve Collier County, Florida Technical Publication WS-18. South Florida Water Management District.

Meyer, F. (1989). Hydrogeology, Ground-Water Movement, and Subsurface Storage in the Floridan Aquifer System in Southern Florida. United States Geological Survey Professional Paper.

USDW estimated based on: Nov 30, 2012 letter from Schlumberger Water Services to FDEP

Oil Well Depth estimated from: Actual Wellpath Report received by FDEP Jul 30, 2013 for permit no. 1349H issued by FDEP to Dan A. Hughes

Abandoned borehole depth estimated from: Well 86 Oct 23, 1948 casing schematic and Well 103 July 27, 1949 casing schematic

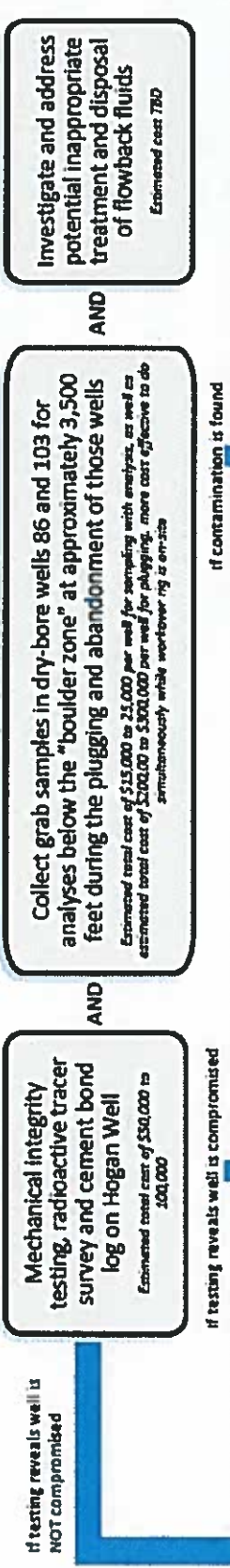
Boulder zone top estimation from: Drillers log well 86: 2,248 ft (November 1948) and well 103: 2,876 ft (August 1949).

Boulder zone bottom estimation from: Drillers log well 86: 3,298 ft and well 103: 3,289 ft.

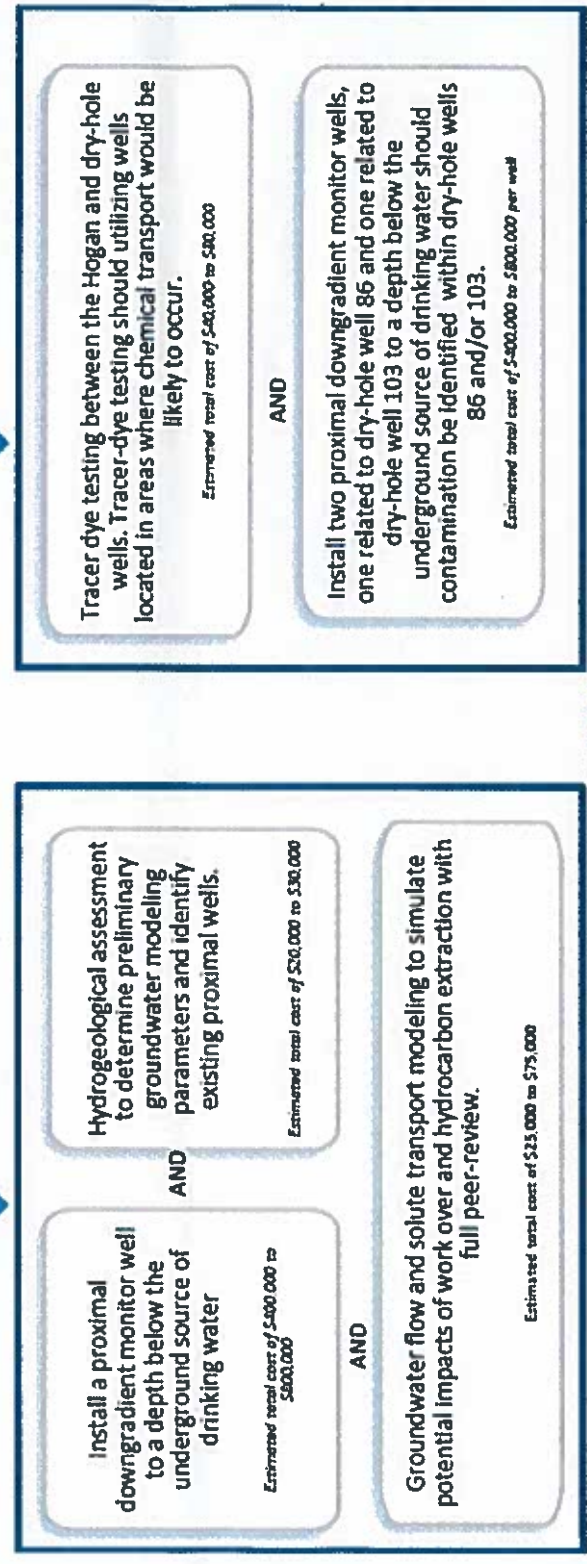
The presence of this significant variation in the boulder zone between boreholes at 86 and 103 and the presence of anhydrite noted in the drillers log to occur within and above the boulder zone in the well 103 borehole, is suggestive of faulting and or fracturing of deeper strata within the vicinity of the Hogan oil well.

Produced by the Conservancy of Southwest Florida in consultation with Noah B. Kugler, M.S., P.G., H2O GeoSolutions LLC

Immediate FDEP Responsibilities



Secondary Assessment Steps



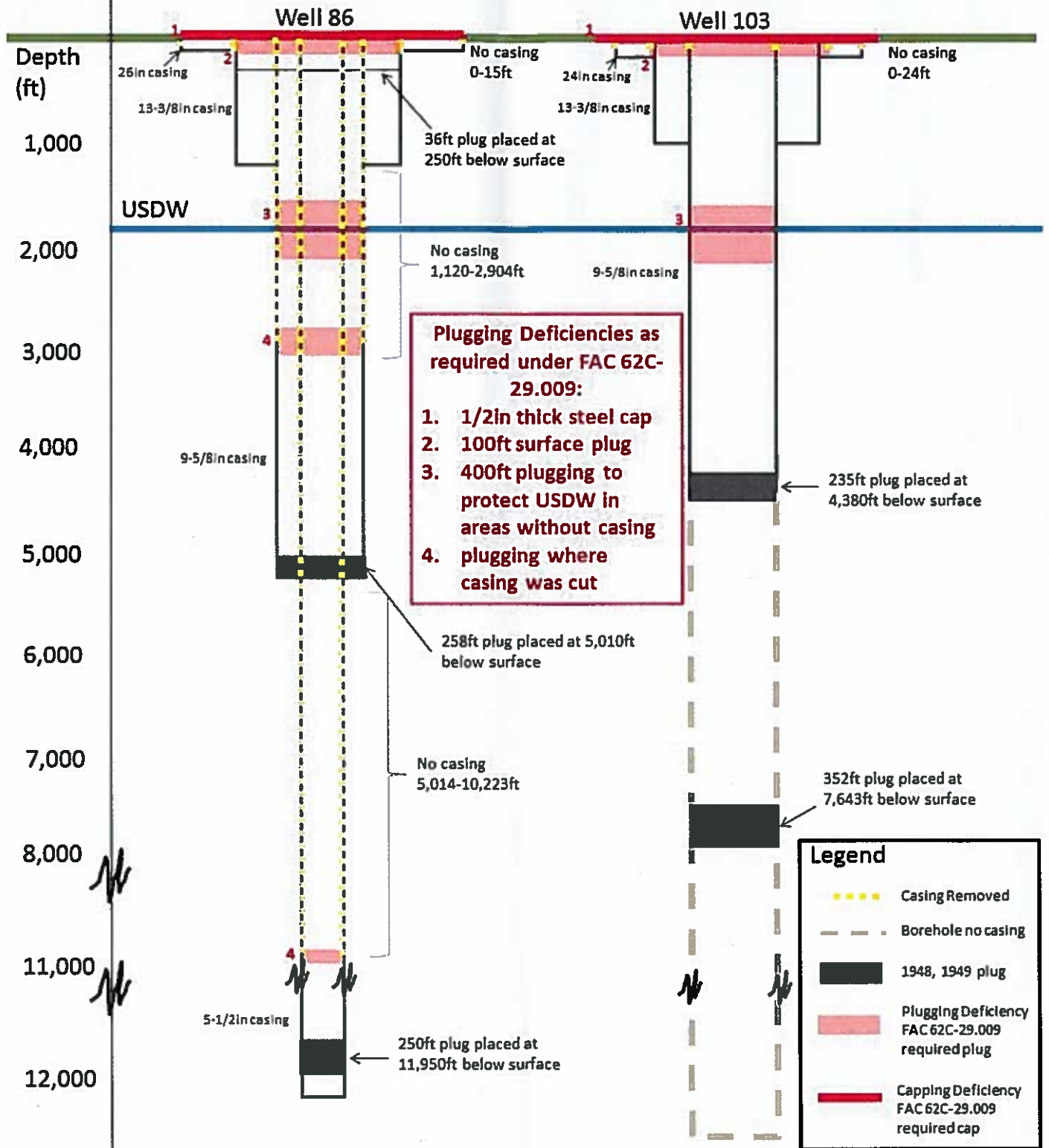
Applicant Remediation Responsibilities



All costs are preliminary. Bids related to each effort will need to be obtained to provide more accurate cost estimates.

1948 and 1949 Well Plugging Deficiencies

Based on 1948 and 1949 Affidavit of Plugging Completion (DEP Form 12)



Plug thickness estimated based on sacks of cement provided in 1948 and 1949 records.
 1 sack of cement=1.18ft³
 Vertical fill (ft)=Sacks of cement*1.18ft³ per sack/casing area

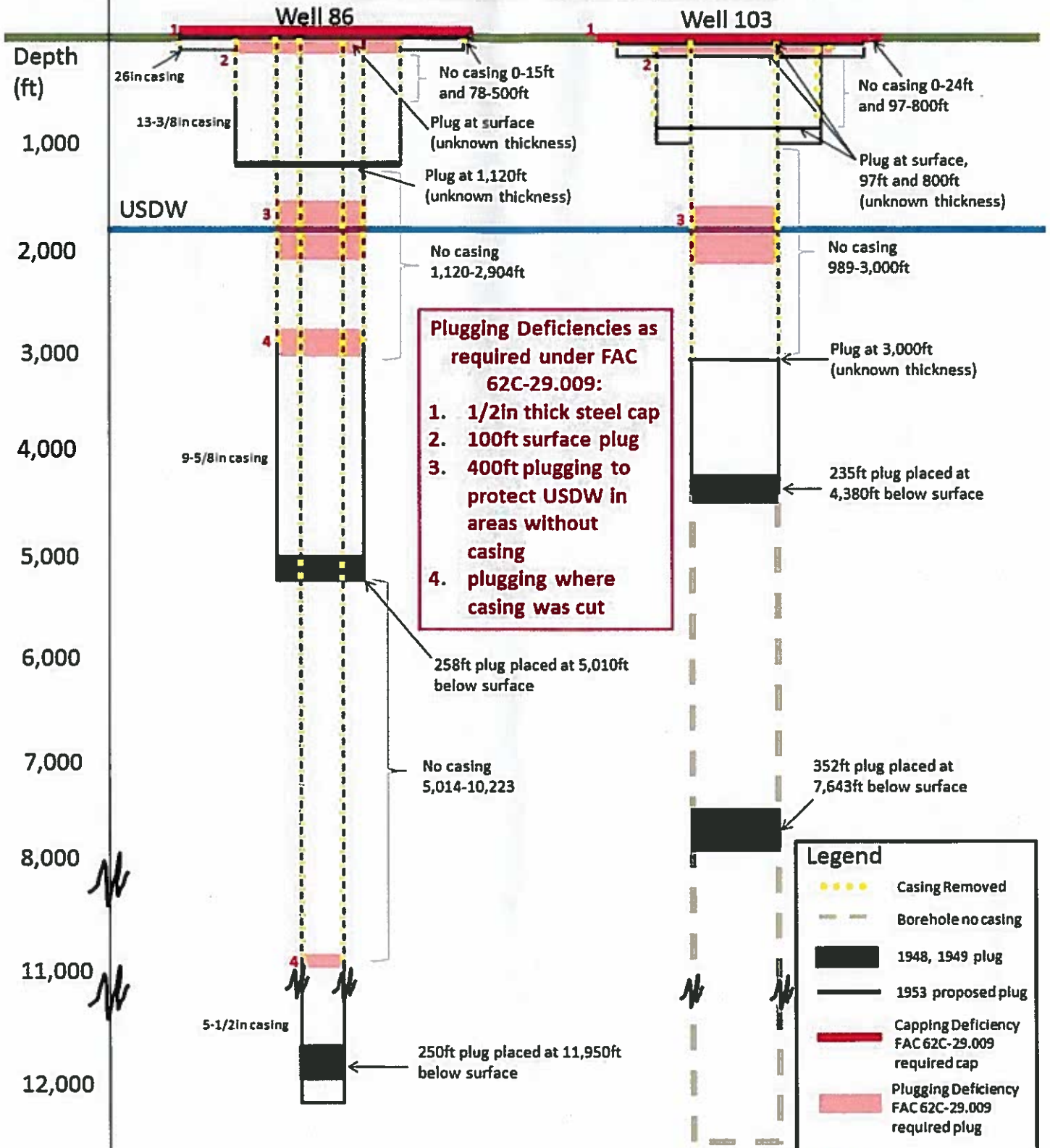
Figures developed in collaboration with Noah Kugler P.G., H₂O GeoSolutions

Proposed casing salvage and plugging

Based on 1953 Notice of Intention to Salvage Casing and Plug Well (DEP Form 5)

Records indicate that this operation was not completed at Well 86 and

likely not economically viable to perform at Well 103



Plug thickness estimated based on sacks of cement provided in 1948 and 1949 records.

1 sack of cement=1.18ft³

Vertical fill (ft)=Sacks of cement*1.18ft³ per sack/casing area

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